

FINANCIAL TIMES

World Business Newspaper <http://www.ft.com>

WEDNESDAY APRIL 1 1998



EU enlargement
Proof that Europe has
a foreign policy
Lionel Barber, Page 14



Unrest in Russia
Unpaid workers protest
but they remain impotent
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Hungarian elections
Socialists bathe
in IMF praise
Page 3

Today's Survey
Information
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WORLD NEWS

Russian parliament presses Yeltsin over choice of prime minister

Russia's left-dominated parliament threatened to block the nomination of Sergei Kiriyenko as prime minister unless it was consulted. A resolution to be debated today calls on Boris Yeltsin to meet the legislature's choice of government head. Page 2

Armenian PM wins polls
Armenia's prime minister and acting president, Robert Kocharyan, has beaten his former communist opponent in presidential elections marred by claims of irregularities. Page 3

UK sets up special crime squad
Britain's National Crime Squad, launched today, will be first modern UK police organisation to target serious organised crime throughout England and Wales. Page 8

Turkish prisoners seize guards
Leaving prisoners in at least five Turkish jails took more 40 guards and officials hostage in a concerted move to press for the return of fellow prisoners to a western jail. Page 16

Germany accepts blame for crash
Germany said one of its Air Force aircraft was the main cause of a collision with a US Air Force freighter off Namibia, southern Africa. The crash last September killed 33 people. Page 17

Israel brushes aside US fears
Israeli prime minister Benjamin Netanyahu shrugged off US assessments that Middle East peace moves were in "dire straits". Page 4

Irish talks hit problems
UK prime minister Tony Blair moved to head off a crisis in the Northern Ireland peace talks as differences emerged over proposals for a regional assembly. The latest arguments cast new doubt over whether the talks participants can reach agreement by April 9. Page 8

US harbour tax 'unconstitutional'
The US Supreme Court ruled the Harbor Maintenance Tax, passed by Congress in 1985, unconstitutional. The levy on commercial cargo at US ports yielded millions of dollars in government revenue. Page 5

Malaysia rejects asylum plea
Malaysia said it considered 14 Indonesians seeking asylum in a UN compound in Kuala Lumpur to be illegal immigrants who were to be deported. The Indonesians say they fear persecution if repatriated. Page 6

Zhu leaves for Europe
China's new premier Zhu Rongji flew to Europe for a gathering of European and Asian leaders likely to be dominated by Asia's financial crisis. Before the weekend meeting he will be on an official visit to Britain. Page 1

Australia hands over A-test site
More than 270 square miles of Australian land used by Britain for atomic testing in the 1950s and 1960s was restored to its Aboriginal owners. Page 1

Cambodia regains control
Cambodia's flag flew over the Fresh Vihear temple for the first time in years after Khmer Rouge guerrillas defected to the government. Page 1

Karachi explosions kill 3
Three people were killed and 28 injured by three explosions in the Pakistani city of Karachi. India has denied Pakistani accusations of involvement in recent bombings. Page 1

Eight to fight Ecuador polls
Eight candidates have registered to contest Ecuador's May presidential elections. In a surprise move, vice-president Rosalia Arteaga resigned so she can run for the Independent Movement for an Authentic Republic party. Page 4

BUSINESS NEWS

Russia's central bank chief seeks rouble devaluation to help exporters

Sergei Dubinin, the governor of Russia's central bank, said the rouble must be gently devalued, in line with inflation, to help Russia's battered exporters compete globally. Page 16

BMW, German carmaker, warned
It would cease to supply parts to Rolls-Royce Motor Cars, forcing the temporary closure of the UK luxury car company. If a rival bidder thwarted its attempt to control Rolls-Royces. Page 17

Gazprom and Yukos, Russian energy companies, warned
It would cease to supply parts to Rolls-Royce Motor Cars, forcing the temporary closure of the UK luxury car company. If a rival bidder thwarted its attempt to control Rolls-Royces. Page 17

Grupo Minero México, Mexico's biggest mining company, completed
the largest Latin American private-sector bond offering since the Asian crisis. Page 21

Fincantieri, Italian state-owned shipbuilding group, reported a 79 per cent
fall in annual earnings to L10.7bn (\$58.8m) after production difficulties. Page 20

Digital Equipment chief executive Robert Palmer indicated that he was
unlikely to remain with the computer group after the proposed merger with Compaq Computer is completed. Page 21

Commerzbank of Germany has hired
more than two dozen analysts and traders in London for its investment banking operation. Page 20

Life, the London International Financial Futures and Options Exchange, plans to change its govern-
ance structure in a drive to improve decision-making. Page 17

Schindler, of Switzerland, the world's second biggest maker of lifts and
escalators, expects improved profits in 1998. Page 20

Thailand's central bank tightened
provisioning requirements for the country's commercial banks, bringing loan classification rules up to international standards. Page 6

Norske Skog, Europe's largest
newsprint supplier, plans to buy a mill in South Korea from Thai forestry group Shin Ho Paper. Page 20

Bank Negara, Malaysia's central
bank, said it had secured agreements to consolidate the country's 39 finance companies into eight. Page 6

MD Foods International of Denmark
had its future left in doubt following disagreements among shareholders over a planned financial reconstruction. Page 20

Banca Nazionale del Lavoro, Rome-based commercial bank to be
privatised this year, reported a consolidated loss of L2.803bn (\$1.563m) for 1997, compared with a L151bn profit in 1996. Page 20

Warner Music and Sony Music, two
of the world's biggest record companies, plan to create the UK's largest distribution centre for music, videos and electronic games. Page 6

Tristar Pictures, is to disappear
following the decision of Sony Pictures to fold the Hollywood studio into its larger Columbia Pictures subsidiary. Page 21

World Equity Markets

The latest trends and data from more than 60 national markets at a glance
Page 25

Oil prices fall after Opec cut

By Robert Corzine in Vienna

World oil prices fell on doubts that the global production cut agreed early yesterday by the Organisation of Petroleum Exporting Countries would stabilise crude markets.

The bellwether Brent Blend for May delivery hit \$14.44 in late trading in London yesterday, down 35 cents from Monday's close.

The market was reacting to a joint move this week by Opec and five non-Opec producers, including Mexico and Norway, to remove around 2 per cent of world supply from today.

A global oil glut recently sent prices tumbling to nine-year lows, threatening to cause havoc to the national budgets of the main oil producing states.

In a seven-hour session that lasted until the early hours of

Delegates defend agreement to reduce world supply by 2% but markets remain sceptical amid glut

yesterday, Opec oil ministers ratified an agreement to reduce world output by 1.5m barrels a day.

Yesterday Opec delegates put up a spirited defence of Tuesday's agreement. "Those who went short [in the oil futures market] will be lucky in a few days to run away with their clothes on," said one senior Saudi Arabian official.

Delegates also shrugged off yesterday's price falls. "We didn't expect to get much of an immediate positive impact," insisted one Kuwaiti oil official.

"If you remove barrels the price will fall," said Luis Ghust, president of Petroleos de Venezuela, the Venezuelan state oil

company. "You have to allow some time."

The cut of 1.5m b/d was at the lower end of the 1.5m-2m b/d range mentioned just over a week ago when Saudi Arabia, Mexico and Venezuela paved the way for the global reduction by signing the Riyadh pact cutting 600,000 b/d. It defused a bitter row between Caracas and Riyadh over Opec oil policy.

Delegates said expectations Opec might try to orchestrate a larger reduction had been misplaced.

They said it had been hard enough to agree on 1.5m b/d, although there were hints of possible additional reductions at Opec's next scheduled meeting at

the end of June should the market fundamentals deteriorate further.

They also dismissed speculation that some Opec states might not implement individual national reductions, given the organisation's patchy record of sticking to normal quotas.

"It's all voluntary," said one delegate. "But even if we don't see all 1.5m I'm confident we will see the bulk of it."

Although the initial market judgment was negative, some traders said the pessimism was overdone.

They predicted that over time there might be a greater willingness to give the deal the benefit of the doubt.

"Opec got a bit of a bum rap here," said Peter Gignoux, head of the energy desk at brokers Salomon Smith Barney in London. "I'd be surprised to see a bear raid on the market right now."

Opec officials in Vienna said the effect of the Asian crisis on oil demand was still uncertain. But they said the chaotic situation in Asia that helped trigger the latest price slide had now passed.

In January and early February super-tankers had sailed from the Gulf to Asia only to find that by the time they got there buyers had run out of money and could not pay for the contracted cargoes.

Opec puts stress on its grip to the test, Page 4
Editorial Comment, Page 15
Commodities, Page 26

Tokyo 'Big Bang' adds to pressure on banks

By Gillian Triff in Tokyo

Shares in Japan's beleaguered banks fell again yesterday, underlining the severe problems facing the sector as today's Tokyo 'Big Bang' ushers in an era of more open competition.

The programme of financial deregulation, launched today, aims to revitalise Tokyo as a global financial centre and boost returns on the country's savings.

But it comes at a time when the banks' weak capital bases have been further eroded by investment losses realised at yesterday's end of financial year.

The Nihon Keizai Shimbun, Japan's financial daily newspaper, reports today that the country's 19 largest banks intend to write off or dispose of ¥10.310tn (\$77.56bn) of bad loans in the financial year just ended. Bad loans in the Japanese banking system have been estimated by the banks to be ¥28.000tn, but the ministry of finance has said the broader category of "problem" loans is ¥77.000tn.

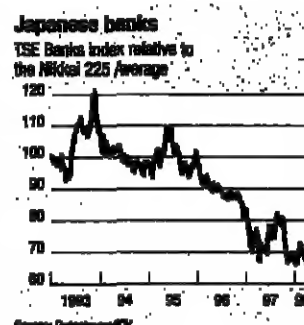
Two main changes will be introduced today as part of deregulation: foreign exchange controls will largely be lifted; and fixed equity brokerage commissions on deals worth more than ¥30m will be liberalised.

The moves could benefit Japanese savers and investors, but they will put the country's banks and brokers under further pressure.

As David Atkinson, analyst at Goldman Sachs, the US investment bank, said: "Big Bang means that existing players are going to be net losers until they focus on profitability - that is what the market movements are saying."

Concerns about the capital strength of Japan's banks and their ability to face tougher competition have depressed the sector's shares for several months. They fell nearly 2 per cent more yesterday.

The value of shares in the main retail banks is now at a record low as a proportion of the whole market. The capitalisation of the



10 biggest commercial banks represents only 8.77 per cent of the Topix, the broadest Tokyo stock market index, down from 17 per cent recorded during the peak of Japan's asset bubble in 1987.

Japanese banks' capital strength has traditionally depended partly on the level of the stock market, because they count part of their huge holdings of shares in other Japanese companies as "capital". When the market falls, capital shrinks.

The Nikkei 225, the key market indicator, closed yesterday at 16,527.17, well below the 18,000 level on March 31 1997.

Under previous accounting practices, this would have obliged some banks to record accounting losses on the value of their shares. However, the Japanese government recently changed some of the accounting rules, allowing banks to disguise the blow by recording equities at book, not market value.

But yesterday's closing level of the Nikkei will still place pressure on the banks because investors will estimate the "market" level of equities.

Reports, Page 6
Bang or whisper, Page 15
Lux, Page 16
Barry Riley, Page 17
Banks undermined, Page 18



Palestinian leader Yassir Arafat leaves the Amsterdam house where Anne Frank hid from the Nazis. Some Jewish groups accused him of reopening the wounds of Holocaust survivors. Peace bid fails, Page 4.

Vanguard to open funds in Europe

By Jane Martinson and Philip Coggan

Vanguard, the world's second largest mutual fund manager, is to enter the European market with a range of index-tracking funds.

The move by the conservative US company is designed to take advantage of the continent's fledgling defined-contribution pension fund market and the growing interest by investors in passive fund management.

In contrast to Vanguard's US business - two thirds of which is sold direct to the public - its European business will be aimed at company pension plans.

John Brennan, chairman of Vanguard, said: "We are coming to Europe with a family of funds that, we hope, will, in the institutional marketplace, lay the seeds for what we have been able to do at home."

The Pennsylvania-based company, which has assets of \$700bn, aims to repeat its success in building a low-cost market niche in Europe. The group is unlikely to advertise. Nor does it intend to expand its marketing team substantially. "There will be no big bang," said Mr Brennan.

Vanguard is rare among large US managers in having failed to set up a European operation.

Mr Brennan said his group decided to expand outside the US only when it was convinced of having a "natural long-term mar-

ket" and when it felt big enough to do so without disturbing its existing business.

Vanguard expanded outside the US for the first time two years ago with a venture into Australia's pension market, where it now manages A\$3bn (\$2bn).

Its European funds will focus on the UK, the Netherlands and Belgium. The average charge for the funds will be between 0.5 per cent and 0.8 per cent.

Steven Mendel, investment adviser at Aon Consultants, said the charges were roughly in line with those of other index trackers for UK pension funds. However, they are far lower than those for UK unit trusts or active managers.

Three new funds, to be registered in Dublin, will track equity indices in the US, Europe and globally, while the group will also offer a cash fund. The operation will be based in Brussels.

Vanguard, founded in 1976 with a mutual structure, closes funds to new investors if they become too large. Its growth has been rapid in recent years - at an annual rate of 35 per cent - as the repeated failure of active fund managers to beat the index has increased the popularity of passive management.

Vanguard warned customers of the risks of a bear market last year. Ironically, the last time it seriously considered moving into the European business was 1987, just before that year's crash.

WORLD MARKETS

STOCK MARKET INDICES		
New York: Dow Jones	8876.79	(+94.67)
New York: S&P 500	1839.58	(+20.88)
Europe and Far East:		
London: FTSE 100	3675.81	(+75.58)
Paris: CAC 40	5102.35	(+92.65)
Frankfurt: DAX	3952.2	(+31.25)
Amsterdam: AEX	1632.17	(+24.12)
US LEADING INDICES		
Industrial Production	0%	
3-month Trade Balance	-5.145%	
Long Bond	102 1/2	
Yield	5.942%	
OTHER RATES		
UK 3-month Interbank	7.75%	(7.75%)
UK 10 yr Gilt	109.5375	(105.997)
France 10 yr OAT	104.19	(104.20)
Germany 10 yr Bund	107.90	(107.92)
Japan 10 yr JGB	108.48	(108.48)
US\$100/£100 (Japan)	513.724	(14.28)
GOLD		
New York: Comex		
Apr	\$301.1	(\$200)
London:		
Apr	\$301.25	(\$202.75)
EXCHANGE RATES		
Dollar:		
New York: London	1.6743	
DM:	1.8408	
FF:	6.1819	
Sfr:	1.325	
Y:	133.255	
Land:		
£:	1.6746	(1.6774)
DM:	1.8491	(1.8446)
FF:	6.1882	(6.1819)
Sfr:	1.3245	(1.3178)
Y:	133.350	(132.14)
Taiwan: New		
Shanghai:		
Y:	133.37	
Shanghai:		
Y:	133.37	

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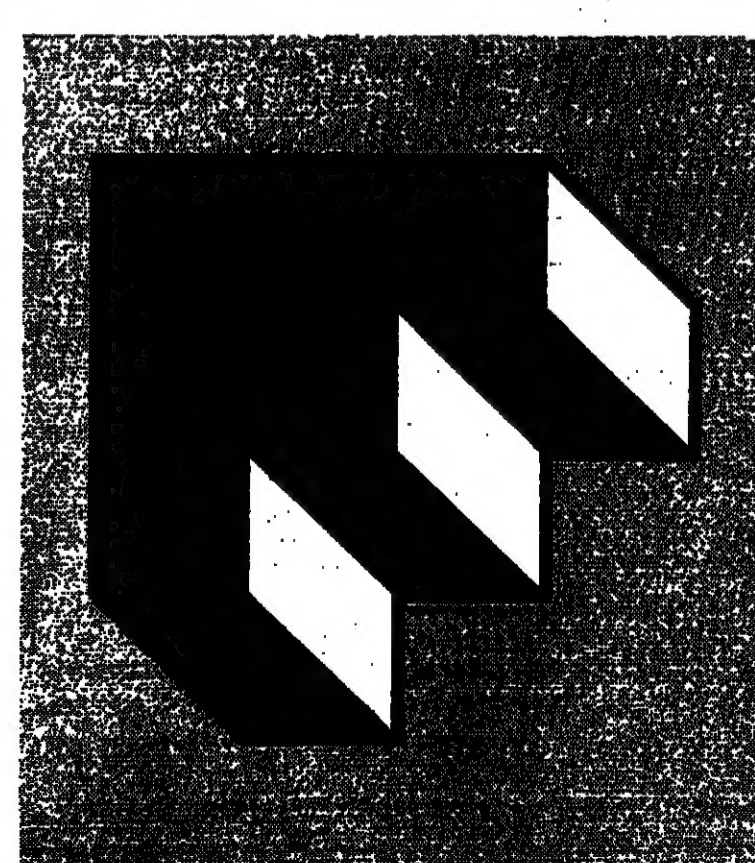


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It's a Cinven challenge



Are you looking
from above or below?

Cinven Capital escalation

Cinven Limited is regulated by DFRD

Czech SE gets a watchdog at last

By Joe Cook in Prague

The Czech capital market, its credibility long tarnished by lack of openness and poor regulation, comes under the attention of a securities watchdog today for the first time since the Prague Stock Exchange opened for business in 1993.

"It is the first step to rebuilding investor confidence in the Czech market," said Kamil Goca of Wood & Co, a Prague stockbroker, echoing the hopes of many in the financial community.

"Right now, the Czech Republic is absolutely avoided by foreign investors, especially institutional portfolio investors."

It may be some time, however, before international investors again cast a serious eye over Czech stock. Their view of the market has soured thanks to a combination of weak shareholder protection, poor disclosure, rampant insider trading and lax enforcement of existing laws.

More fundamentally, corporate performance has been

poor and the economy has slowed after last year's currency crisis. GDP growth fell from 3.9 per cent in 1996 to just 1 per cent last year.

Investors may draw some comfort from the appointment of the widely respected Jan Muller as head of the Czech Securities Commission (CSC).

The 29-year-old Mr Muller has earned respect at home and abroad for his consistent and outspoken advocacy of strong market regulation.

Mr Muller was persuaded to apply for the job by Ivan

Pilip, the finance minister. He takes a 50 per cent pay cut by leaving his job as custody manager at Commerzbank in Prague to lead the commission.

He will be joined by Tomas Jese, a former privatisation minister who now chairs the Prague Stock Exchange, and Frantisek Jakub of the Securities Office. They will later be joined by two more commissioners as soon as suitable candidates can be identified and persuaded to take on the job.

Respect for Mr Muller notwithstanding, there are reservations among investors and market participants about the CSC's strength. Doubts stem from the fact that the planned five-man board of commissioners is nominated by the cabinet and approved by the head of state, which some say could give rise to political patronage.

Moreover, the CSC will be financed by the state budget, not market participants, and it also lacks the power to issue binding rules.

This has cast doubt on the CSC's ability to quickly respond to market developments.

If it seems fit to amend or 'issue' rules, it must submit its proposals to the finance ministry for approval. Such a bureaucratic procedure may cause delays, enabling less scrupulous dealers to profit.

"If the commission doesn't become reputable immediately, investors will never regain confidence in the Czech market," Mr Goca said.

Cross-dressing the norm for Hungary's political parties

Conventional assumptions on European politics do not apply, says Anatol Lieven

Hungary is challenging conventional assumptions about European politics as it prepares for its third free parliamentary elections since the collapse of communism in 1989.

Whereas political parties in a western European country can often be broadly classified as leftwing, liberal, centre-right and conservative, such labels are misleading in Hungary. Only the liberal party, the Free Democrats, really corresponds to its label.

"Hungarian politics are really difficult for a foreigner to understand," observed Gabor Demszky, mayor of Budapest and a Free Democrat leader.

This is because, for several years now, the parties have indulged in an orgy of political cross-dressing. Thus the ruling 'leftwing' Socialists, successors to the Communist party, have implemented the most far-reaching privatisation programme in the former Communist bloc, giving the greatest encouragement to investment by multinational companies.

In 1995-96, the Socialists also implemented an austerity programme of unparalleled severity, with especially harsh results for the poor. Last year, they seized on yet another piece of

'rightwing' clothing by signing a concordat with the Vatican guaranteeing a strong place for the Catholic Church in the education system. This infuriated their coalition partners, the Free Democrats, with their urban intellectual base and traditional anti-clerical attitudes.

As for rank-and-file Socialists, used to strict party discipline, they seem immune to further ideological surprises.

Finally, the Socialists, once loyal to Moscow, then neutralist, last year scored two historic foreign policy successes by securing invitations to join Nato and to begin negotiations with the European Union.

The Socialists are running in the May 10 elections on this record, and above all on the argument that their economic policies have proved a triumph for success. Growth for this year is predicted at between 4 and 5 per cent, and the IMF praises the economy as the most soundly based in the region.

Partly in response, the main 'rightwing' parties, the Young Democrats (Fidesz) and the Smallholders, are emphasising 'leftwing' economic themes: attacking the disparities of wealth created by the changes under Socialism; the rule of law, and demanding equality of opportunity, redistributive taxation, and defence of education and the health service.

Laszlo Csaba, an economist at the Kopint-Datorty Institute in Budapest, said the policies of the different parties to some extent reflected their class base. The Socialists have close links with the businessmen who emerged from the former Communist bureaucracy.

The opposition are supported by the professional middle classes of the Communist era - teachers, doctors and so on - who were the principal losers from economic change. The Smallholders have strong support among farmers.

Mr Demszky traces the policies of the 'right' to the traditional populist attitudes of Hungarian conservatism, coupled with the absence in post-Communist Hungary of a stable and prosperous middle class. "Instead, we have an impoverished society in which the 'right' is based on the losers from the transition, who blame liberalism and the free market for their sufferings."

Until a few weeks ago, however, the opposition's arguments did not seem to cut much ice with the electorate. Opinion polls showed the Socialists well ahead of the other parties.

Mr Demszky said that the Free Democrats were unlikely to agree, because in these circumstances the coalition would be too unequal and the Free Democrats would end up being suffocated by the Socialists.

The latest opinion poll, published in the Magyar Hirlap newspaper, showed Fidesz running almost even with the Socialists. This seems to reflect anti-Socialist voters rallying to Fidesz as it becomes clear the latter has the best chance of ousting the Horn government.

A Socialist victory in May still seems probable. Even if a coalition of Fidesz and the Smallholders were to take power, most analysts think that economic realities, and Hungary's desire to join western Europe, would restrict the new government's ability significantly to change course.

Having begun by stealing each other's clothes, the main parties may end up by all wearing variants of the same patchwork costume.

Kocharyan wins in Armenia amid poll suspicions

By Selma Williams in Yerevan

Armenia's prime minister and acting president, Robert Kocharyan, has beaten his former communist opponent in presidential elections that were marred by claims of irregularities as soon as voting started.

With about two-thirds of the vote counted, the central election commission said Mr Kocharyan had 60.75 per cent of the vote, compared with 39.25 per cent for his rival and one-time leader of Soviet Armenia, Karen Demirchyan.

But one western observer said the elections were rigged. The observer said turnout figures were suspiciously high, reaching almost Soviet proportions in some precincts in Yerevan.

"There is no other way to explain such bizarre figures," the observer said, referring to a precinct where turnout jumped from 69 per cent in the first round two weeks ago to almost 99 per cent in the final round on Monday. "The pattern is the same nationwide: high turnout, with the extra vote in Kocharyan's favour. The only explanation is that the ballot boxes were stuffed," the observer said.

The central election commission head, Khachatur Bezhiryan, said many complaints had come in on election day, but they had been unable to find any concrete evidence to support them.

Some 150 international observers with the Organisation for Security and Co-operation in Europe scrutinised the counting procedures. The OSCE said there were first round violations but would not issue a statement on the second round until all results are in.

FRENCH VOTING ATTEMPTS TO IMPROVE SYSTEM ARE THINLY DISGUISED EXCUSE TO EXCLUDE NATIONAL FRONT

Chirac looks to electoral reform

By Robert Graham in Paris

President Jacques Chirac has begun sounding out French political leaders on ways to overhaul the country's various electoral systems.

The review, promised in a nationwide address on March 23, was prompted by the outcome of regional elections in mid-March which saw moderate rightwing parties forging deals with the extremist National Front to retain hold of five of France's 22 mainland regions.

Among the first centre-right politicians to see Mr Chirac were Francois Bayrou, a former education minister from the UDF group, and Alain Madelin, a former finance minister who was the most ambiguous among UDF leaders in denouncing deals with the National Front.

Mr Chirac is formally pledged to find ways of improving the electoral system. But this is a thinly disguised excuse to change the rules to exclude the National Front and to prevent the moderate right from disintegration.

The immediate focus is on the need to put in place a



Centre-right party leader Francois Bayrou gestures after meeting President Jacques Chirac yesterday. Behind are ex-conservative ministers Jacques Barrot, Philippe Douste-Blazy and Pierre Maitalgier. AP

more coherent system for the various elections which operate under different processes. Municipal and local elections use a first-past-the-post system, with a premium for the group that wins most votes to ensure a stable administration.

Regional elections, introduced only in 1986, rely upon proportional representation, which encourages a plethora of parties and unstable ruling majorities. National parliamentary elections in contrast rely on a two-round, first-past-the-post system.

All the main political parties have talked of rewriting the rules for regional elections for the past three years. The nine-month-old Socialist-led government said with some justification there was insufficient time to make changes before the

March poll. But now the issue has become much broader than simply finding a more effective regional electoral system.

For his part, Mr Chirac may well be tempted to build a consensus around altering the rules for general elections. In particular, he may seek to limit the second round run-off to only two contenders. This would avoid the 'National Front', which wins about 15 per cent of the vote, siphoning off support from the moderate right. At the same time the government may raise pressure for a cut in the presidential term to five years from seven.

The consultation process will last into next week and is expected to embrace academics and constitutional lawyers. Lionel Jospin, the prime minister, is likely to fight hard behind the scenes to prevent Mr Chirac from reaping an advantage and giving too much of a helping hand to his demoralised allies in the Gaullist RPR and the liberal UDF.

Neither party has yet overcome the shock of so many of their number breaking party discipline to align with the National Front in the regions.

Olympic's workers protest over cost-cutting

By Maria Hope in Athens

The confrontation between Greece's Socialist government and unions at Olympic Airways, the loss-making state carrier, deepened yesterday as airline workers demonstrated outside parliament in protest against draft legislation to cut costs.

The cost-cutting package, which includes a three-year wage freeze, longer working hours and a ban on overtime, is intended to produce savings of Dr50bn (\$157m) yearly over the next five years, transport ministry officials said.

It is expected to result in some job losses as Olympic's workers will be required to sign individual agreements accepting the new working regulations.

The government resorted to legislative measures after talks between Olympic's management and unions broke down on Monday. Olympic's unions called a three-hour work stoppage yesterday, with backing from Greece's trade union confederation.

Transport ministry officials denied a report that Theodoros Tsakirides, Olympic's chief executive, had

resigned after being harassed by militant protesters who stormed his office at the airline's headquarters.

The Socialists are committed to restructuring Olympic, and three other loss-making state corporations which have accumulated heavy debts, as part of the effort to qualify for membership of the European single currency by 2001.

The government signalled yesterday that it would stand firm on public sector reform despite the dispute with Olympic's unions, which have traditionally

been strong supporters of Costas Simitis, the prime minister, and his moderate wing in the Panhellenic Socialist Movement.

Yannis Papantoniou, economy minister, said that similar legislative packages would be pushed through parliament if negotiations failed with unions at the Greek Post Office, Hellenic Railways and the Athens bus company.

The three corporations have debts totalling more than Dr700bn. Olympic was allowed to write off almost Dr600bn in debt in 1994 as part of a restructuring

agreed with the EU. However, losses last year amounted to Dr6.5bn, mainly because of salary increases averaging 30 per cent.

The government has threatened to shut down the airline if it fails to reach agreement with the 7,000 workers on the restructuring, and re-open it under a new charter.

If the crisis is prolonged, Olympic will be in danger of losing control of profitable routes to the Greek islands this summer, as domestic routes are due to be opened to international competition from July 1.

CONTRACTS & TENDERS

Invest in Romania!

STATE OWNERSHIP FUND

Advertising release for sale of shares by direct negotiation

The STATE OWNERSHIP FUND, a Romanian public institution based in Bucharest, 6, Stavropoleos Street, sector 3, is offering for sale by direct negotiation according to the Government Urgency Ordinance no.88/1997a 51% of the issued share capital of VENTILATORUL SA.

- Registered Office: Bucharest, 44 Sargent Nitu street, sector 4.
- Fiscal Code: R405703.
- Registration no. at Commercial Register Office: 140/57/1991.
- Issued stock capital, according to the latest records at the Commercial Register Office: 16,012,175 thousand, ROL.
- Turnover in 1996: 17,356,291 thousand, ROL.
- Net profit in 1996: 1,980,049 thousand, ROL.
- Main scope of activity: manufacturing and trading of industrial fans and of air conditioning equipment.

Total number of shares at a nominal value of 25,000 ROL each: 640,847.

The share ownership structure is as follows:

	%
State Ownership Fund	59.996
Financial Investment Company Muntania	4.608
Share owners through mass privatization	10.008
Shares assigned through public offer	25.388

The offer price for the 51% issued share capital, i.e. 326,648 shares is 5,836,053 USD.

The Company PRESENTATION FILE required for subscription to the offer may be obtained at the State Ownership Fund, SOF-RDA BUSINESS CENTRE, OFFERS DIVISION of the International Relations Department, Bucharest, Str. STAVROPOLES, nr.6, phone 04-01/5110495; 5123130; 5124231 and fax 04-01/5121841, daily between 8.00 and 16.00 hrs. until 08.04.1998, at a price of 1,600 USD for foreign citizens or legal entities or ROL equivalent at National Bank exchange rate applicable on the PRESENTATION FILE purchase date for Romanian citizens and legal entities.

This sum has to be transferred in advance to the State Ownership Fund accounts: no. 2511.00000000242.3.00008 in USD at the Romanian Bank for Foreign Trade (BANCOREX) for foreign investors, or no. 2511.0098.0900224 in ROL, at the Romanian Bank for Development - Bucharest Branch (BRD-SMB) for Romanian investors.

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CONTRACTS & TENDERS

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EXPIRATION 15.04

INTERNATIONAL

Israel defiant as peace bid fails

By Judy Dempsey in Jerusalem

Benjamin Netanyahu, Israel's prime minister, yesterday brushed aside suggestions that Dennis Ross, US Middle East peace envoy, returned to Washington "empty-handed".

Speaking to Jewish settlers in the West Bank who oppose any Israeli pullback, Mr Netanyahu said: "We're no suckers. We don't give without receiving." He said he had put forward "bridging proposals" to the Americans, but the US State Department contradicted everything Mr Netanyahu said.

"We have been unable to bridge the gaps on the hard questions," said James Rubin, US State Department spokesman, reflecting the growing sense of frustration with Israel's refusal to make any concessions over the amount of land it will hand back to Palestinian control.

The US wants Israel to give 13 per cent of land back to the Palestinians in the second round of troop pull-back. But such an amount of territory would not be sufficient to form a viable Palestinian state, a view commonly shared by US and EU diplomats.

In London a spokesman for the prime minister said Tony Blair might accept an invitation from the Palestinian authorities to stay in Gaza during his four-day trip to the Middle East.

His office said it was "possible" that the prime minister would take up the suggestion put forward by Yasser Arafat, the president of the Palestinian Authority. He would be the first world leader to stay in Gaza, symbolically boosting its status towards statehood.

Diplomats said Washington would now have to decide what, if any, pressure it would exert on Israel to revive the peace process before patience among Palestinians runs out.

Opec puts firmness of its grip to the test

By Robert Curzlee in Vienna

During the next few months governments in the Gulf and other oil-producing regions will desperately be seeking signs that their co-ordinated output cut agreed early yesterday by the Organisation of Petroleum Exporting Countries is beginning to bite.

The aim of the agreement, which also covers five non-Opec countries including Mexico and Norway, is to shave around 2 per cent off world production of about 75m barrels a day. That, say backers of the scheme, should be enough to re-balance the market, which is awash with crude oil as a result of the Asian crisis, the mild winter, and an ill-timed rise in Opec production last November.

However, world markets remained sceptical of the efficacy of the plan, and the price of oil fell further yesterday.

Mexico and Norway will each reduce output by 100,000 b/d as part of the global cut. Individual Opec contributions range from a 300,000 b/d cut by Saudi Arabia, the world's biggest crude exporter, to a 30,000 b/d cut from Qatar, the small Gulf state that has

consistently produced above its Opec quota. The cuts, due to be implemented today, are outside the Opec quota system, which in practice is being ignored, although officials in Vienna vehemently deny that the new pact heralds the death of the old quota system. "This is a temporary fix to a temporary problem," said one.

Coming months will be a testing time for the exporter's group. Some of the cuts will be quite prominent: Kuwait is to halt all spot oil sales, while Saudi Arabia may make some deep reductions in some of its sales contracts. Those from smaller producers will be harder for the markets to detect.

There will also be questions about whether they are fully implemented. After all, Opec's record for adhering to normal quotas is patchy at best. So what makes the latest accord any different?

"This time we're all hurting," said one Gulf Arab delegate yesterday in commenting on the financial damage that low prices has inflicted on many oil economies in the Gulf and elsewhere. "They know that if we didn't do anything the worse might happen."

In the case of Opec mem-

bers such as Iran, Algeria and Nigeria, all of which were under considerable economic and political strain even before oil prices fell, "the worse" could include greater social unrest.

Officials also insist that the arrangement is even better for Venezuela and Qatar, two chronic Opec quota-cheaters, as long as it delivers on the promise of stable if not higher crude prices. Both countries are in the midst of large-scale, capital-intensive expansions of their energy sectors. They need higher prices to underpin those expansions.

But yesterday's slide in oil prices suggests the markets believe a cut of 1.5m b/d is too little given the large amount of surplus crude in the world. "To agree 1.5m is a lot," countered one Kuwaiti representative.

Opec officials say that even if the full cut of 1.5m b/d does not materialise, those that are implemented will be big enough for the market to be unable to ignore them. "After all, it's better than having something that people are not really committed to," insisted the Kuwaiti delegate.

But what happens if oil prices fall to the recent nine-



Saudi oil minister Ali Naimi leaving the Opec meeting early yesterday. The world's biggest exporter plans deep cuts. Reuters

year lows that prompted Opec and other big exporters to take action? Delegates said there was no "trigger point" that would automatically prompt new measures. But they note that the next

Opec meeting is just under three months away should the latest cuts prove inadequate to halt the price slide.

Editorial Comment, Page 15; Market report, Page 25

Lebanon \$1bn eurobond sale lifts reserves

By Randa Khalaf in London

Lebanon raised \$1bn in three and five year eurobonds yesterday, double the amount it had originally sought from international capital markets.

By boosting foreign exchange reserves, the issue, part of a programme to raise \$2bn to restructure Lebanon's debt, will buy the Lebanese central bank more time to support the currency.

The huge demand for Lebanese bonds masks underlying weaknesses in the economy and the government's persistent efforts to avoid a depreciation. According to Paribas, the lead manager, half the eurobond issue was sold to Lebanese banks, with the rest split between Middle Eastern and European investors.

Local banks have often been buyers of eurobonds, but bankers said the big demand this time was partly driven by an effort to help the central bank accumulate foreign exchange reserves.

"The banks have dollar liquidity and they are aware that in the end they stand to lose from a depreciation of the currency," one banker said.

Lebanon's currency came under pressure when foreign investors in Lebanese Treasury bills withdrew from the market in the wake of the Asian crisis. Local investors grew increasingly concerned about a spiralling budget deficit and a debt burden (largely domestic) which today has reached 85 per cent of gross domestic product.

At the end of last year, the central bank averted a currency crisis through heavy intervention on the currency markets, which led to an erosion of foreign exchange reserves.

Since then, Rida Salame, the central bank governor, has been rebuilding reserves, first by attracting at the end of December a

\$800m Saudi government deposit, \$500m of which went directly into the reserves.

The Saudi deposit was followed earlier this year with a \$100m deposit from Kuwait, and now the \$1bn in eurobonds.

Mr Salame said that net reserves at the central bank were down, about \$100m since December, and bankers estimate net reserves before the eurobond issue at no more than \$2.5bn.

According to bankers, public sentiment has not yet turned in the pound's favour, with local investors waiting for the government to prove it will stick by its projected public deficit figures this year.

The Lebanese typically rush to change their money into dollars when they sense a political crisis. The squabbling between Lebanon's top politicians could intensify with presidential elections expected in the autumn.

In early March, Rafiq Hariri, the prime minister, stormed out of parliament after a dispute with Nabih Berri, the parliament speaker, costing the central bank an estimated \$80m to support the pound.

The eurobonds will be used to retire more expensive domestic borrowing or peg the outstanding local currency debt at its current level. Mr Salame said the situation remained stable and interest rates were not being raised to keep the Lebanese from dumping T-bills. But he admitted that the market today "depends on the political scene".

"The markets have again gained relative immunity in the short term with the \$1bn, and there are promises of more Arab deposits coming," said a banker. "The fundamental imbalances are still there. It is like buying time in the hope that you'll have structural adjustment in the economy and get through the presidential elections."

Veteran Botswana leader steps down

By Mark Ashurst in Gaborone

Sir Ketumile Masire stepped down after 18 years as president of Botswana yesterday, as US President Bill Clinton paid tribute to his role in building Africa's strongest economy.

His retirement coincided with the US president's departure from Botswana, where he has spent three days, for Senegal, the final stop on his six-nation African tour. Festus Mogae, Botswana's vice-president, will be sworn in as head of state today.

Sir Ketumile, 72, has pre-

sided over one of the most remarkable economic successes on the continent. Between 1976 and 1990, exports of diamonds mined beneath the Kalahari desert fuelled annual gross domestic product growth of 11 per cent, making Botswana the fastest growing economy in the world.

With foreign reserves estimated at \$5bn, the landlocked country is in the rare position for an African state of being a lender to the International Monetary Fund. The first diamond reserves were discovered in 1967, a year after Botswana

gained independence from Britain.

Sir Ketumile has pursued an ambitious development programme since 1980, when he succeeded Sir Seretse Khama, Botswana's founding president. Diamond exports have increased tenfold over the same period, funding the creation of an extensive public health and education system, and a 14,000km road network.

Economists expect continued buoyant growth of about 7 per cent this year.

True to the themes of his 11-day African tour, Mr Clinton praised Botswana for

espousing democracy and liberal economic policies. He lauded the joint mining venture between Sir Ketumile's administration and De Beers, the South African diamond producer, and cited Botswana as an example for other African states. The US was "determined to support all those who follow your lead," Mr Clinton said.

However, the economic boom has done little to alleviate poverty in Botswana. According to official figures, 47 per cent of the population live below the poverty line, youth unemployment is rising, and a third of the sex-

ually active population are infected with the HIV virus.

Support for Sir Ketumile's Botswana Democratic party, which has ruled since independence, has waned over the past decade. His retirement, a year before the next general election in 1998, has been widely interpreted as an opportunity for younger leaders to rejuvenate the party. This follows significant gains made in the 1994 election by the Botswana National Front, the main opposition party, which commands strong support in urban areas.

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Intelsat in
satellites
sell-off plan

Wagon manufacturers
are key to growth

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away \$200 (144)

Intelsat in satellites sell-off plan

By Nancy Dunne in Washington

Intelsat, the inter-governmental satellite organisation, yesterday announced it would spin off five satellites plus one under construction, creating a privatised company called New Skies Satellites.

The fledgling company will be the result of four years of tough negotiations between Intelsat's 142 members. It is seen by the US, its prime backer, as a first step towards total privatisation of the government-owned Intelsat system, which provides voice, data and video services to over 200 countries and territories.

The negotiators, who have been in talks for several weeks in Salvador, Brazil, were jubilant a deal was reached. "We've shown that an organisation of 142 disparate countries can make fundamental changes in its organisational structure in a positive way, one that preserves a fair competitive framework," said Tony Trujillo, Intelsat spokesman.

US officials envisage New Skies as "a commercially viable" company, free of the bureaucratic decision-making structure they say hinders Intelsat. The company will be launched with assets of some \$700m-\$1bn, but no management structure, board or employees. Even the name may be changed.

It will mostly provide new services such as television and internet transmissions. For the first months Intelsat will provide staff under contract, recruitment is under way for a chief executive.

Initially, Intelsat will own 10 per cent of the stock, with the other 90 per cent to be distributed to individual Intelsat members. Safeguards have been agreed to ensure an arm's length relationship. Intelsat representatives will not be allowed to sit on the New Skies board. Intelsat has agreed to waive its immunity to prosecution for any antitrust activity in regard to the new company.

The company will be incorporated in the Netherlands. Once it has a management team in place, it will choose a home base and schedule a public share offering, the first of a series leading to a publicly held majority. An initial public offering (IPO) will be held within a year for at least 25 per cent of the shares. The new company is seeking partners among existing satellite companies.

Legislation is moving through the US House of Representatives to try to use US market access to force Intelsat privatisation by 2002. But Senator John McCain, Commerce Committee chairman, has indicated he will kill the bill in the Senate.

Clinton's sex life still on the agenda as president gets back to business of keeping quiet

President's absence has not dented appetite of his tormentors for more details of alleged misdemeanours, says Gerard Baker

President Bill Clinton returns to Washington tomorrow from his 12-day interlude in Africa and gets back to the important business of avoiding answering questions about his sex life.

If he had hoped his long absence might have dulled the appetite of his legal, political and media tormentors for more details of his alleged misdemeanours and cover-ups, he will be abruptly disabused when he steps off Air Force One at Andrews Air Force Base.

Although in his absence Congress has been in one of its busiest legislative phases only one issue - the allegations against the president - has the capacity to set the pulse of Washington's political elite racing.

In the last month the saga has turned into a grisly parade of women with new (and sometimes old) allegations about affairs with the

president, of varying degrees of seriousness. Yesterday the New York Post produced the latest - an interview with Elizabeth Ward Gracen, a former Ms Arkansas, who claims to have had a consensual affair with Mr Clinton when he was governor of Arkansas in 1982.

White House officials cling to the hope that the bewildering stream of new allegations will numb the public mind and perhaps obscure the issue of whether he committed serious offences - from sexual harassment to obstruction of justice.

There is indeed still little evidence to suggest that the public's very first verdict on the revelations - that, if true, they were reprehensible acts, but not matters for impeachment - has changed much.

But Mr Clinton's advisers know they are moving into a critical phase of the crisis.

In the next three months

the various strands of the investigation of the president will begin to converge.

On May 27 the case of Jones vs Clinton will be heard in a courtroom in Little Rock, Arkansas. In a trial that is expected to last about three weeks, Paula Corbin Jones will press her claim that, in 1991, the president sexually harassed her by requesting oral sex, and then, when she refused, ensured she was discriminated against in her job as an Arkansas state employee.

At around the same time, or perhaps even sooner, Kenneth Starr, the independent prosecutor, is expected to present the results of his investigation to Congress. Many Republicans believe he will say he has enough evidence to support a criminal charge against the president.

Mr Clinton's lawyers are working overtime to have the Jones case dismissed and the Starr case dismissed and many sexual harassment



Lewinsky: allegations of affair have thrown former White House worker into centre of the storm

lawyers agree the case will be a difficult one to prove. But if it does go ahead, the decision will be in the hands of a jury - a perilous state of affairs for any president.

The criminal investigation by Mr Starr still looks to pose the main threat to Mr Clinton.

If the independent prosecutor does produce a case that Mr Clinton had an affair with Monica Lewinsky or groped Kathleen Wilsey, two former White House work-

ers, and then lied about the incidents, under oath and persuaded others to do the same, the case will enter a crucial political phase.

The Republican leadership is not anxious to press for impeachment, given Mr Clinton's popularity. They plan instead to establish a committee that would review the case then make recommendations about punitive action.

In the meantime Mr Clinton remains curiously

incommunicado. He will not talk about the allegations other than to offer simple denials, a policy that gives the continuing frenzy an oddly one-sided nature. But any effort to change the subject to more congenial ground - the economy, the policy agenda - quickly stalls.

It is not surprising the White House has scheduled many more long foreign trips for the president this summer and autumn.

NEWS DIGEST

US CAR INDUSTRY

Foreign manufacturers' plants key to growth

New car assembly plants built by foreign manufacturers have accounted for about half the growth in output of the US car industry during the 1990s, according to a study prepared for the Association of International Automobile Manufacturers.

The trend has made foreign investment instrumental in the US's success in topping Japan as the world's biggest producer of cars and light trucks.

The impact of Japanese and, more recently, European manufacturers on the US's biggest manufacturing industry is detailed in a report from the University of Michigan. It focuses on foreign companies in the US, rather than North America as a whole, and gives the first measures of the impact of foreign investment on the US economy.

This had also had a significant impact on competition in the US and stimulated an overhaul of domestic manufacturers, said David Cole, a professor at the University of Michigan and the main author of the report. "There has been a tremendous stimulus from the international side. We're just a whole lot more productive, and the quality is much better as a result," he said.

The influx of investment by foreign manufacturers was prompted during the 1980s by the low level of the dollar, particularly against the yen, and the political pressure in the US for a reduction in the trade deficit with Japan. Compared with 1988, when foreigners imported 4.19m vehicles and built only 700,000 in the US, imports had fallen to 1.72m and domestic production risen to 2.37m by 1996.

The new US production base has also provided a platform for exports, according to the study. Foreign producers accounted for only 20 per cent of new vehicle sales in the US in 1986, but 36 per cent of vehicle exports to other countries. With newer plants and a younger workforce, foreign companies have also outstripped the domestic competition on measures like productivity and quality. Richard Waters, New York

ECUADOR ELECTION

Eight candidates register

Eight candidates have registered to contest Ecuador's presidential elections scheduled for May 31. In a surprise move, the vice-president, Rosalia Arteaga, resigned so that she can run as candidate for the Independent Movement for an Authentic Republic (Ivira) party. Congress must now elect a new vice-president from a shortlist provided by President Fabian Alarcon.

The Social Christian party (PSC), one of Ecuador's most powerful political organisations, also confirmed its unusual decision not to field a candidate. With the PSC out of the race, the main contenders are Jamil Mahuad, the mayor of Quito and candidate for the centre-right Popular Democracy party; television journalist Freddy Ehlers, candidate for the more leftwing New Country-Pachakutik alliance; Rodrigo Borja, president from 1988 to 1992 and standing for the centre-left Democratic Left party; and Alvaro Noboa, candidate for the Ecuadorian Roldosist party of former president Abdala Bucaram.

If no presidential candidate wins more than 50 per cent of the vote on May 31 there will be a run-off on July 12 between the two candidates with the highest vote. Justine Newsome, Quito

TAX PROTEST

Rich give away \$200,000

More than 80 of the highest taxpayers in the US have each pledged to give away up to \$200,000 in protest against the government's tax cuts last year. Just two weeks before the deadline for filing tax returns, the protest is part of a campaign to highlight how the bulk of last year's tax cuts are being enjoyed by the top 1 per cent of taxpayers.

The protest campaign - called Responsible Wealth - draws on support from the heirs to the Rockefeller and Dupont family fortunes, as well as retired entrepreneurs and chief executives.

Their target is the cut in capital gains tax, backdated to May, which sharply reduced the tax bill on profits from the sale of investments from 28 to 20 per cent. The reduction formed part of a package of cuts worth \$90bn over five years, in a tax and spending budget which aimed to balance the federal budget by 2002.

The tax cuts were largely presented as middle-class tax breaks, and included a \$500 credit to families for each child. But Robin Lloyd, one of the heirs to the owner of the Chicago Tribune, yesterday promised to donate \$8,000 of her new tax breaks to various social and economic charities.

"I believe it is time for people of wealth to speak out," she said. "We don't need this tax break; we shouldn't accept it. It is impoverishing our commonwealth, and the world our children will inherit." Richard Wolff, Washington



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China to give investors airport role

By James Harding in Shanghai

China will open management of its airports to foreign investors this year, in an effort to help its overburdened civil aviation industry answer the demands of a rapidly growing economy.

Air traffic has more than doubled in China in the past five years, straining underfunded and outdated airports. Beijing's commitment to opening the market for the building and management of terminals and services underlines the need for foreign capital.

Xia Xinghua, an official at the Civil Aviation Administration of China (CAAC), set out plans in a report published yesterday for reform of the airport industry and the introduction of Sino-foreign joint management for Chinese airports.

China's debt-ridden airports needed to "open wider to the outside world," Mr Xia said. "The CAAC will issue a regulation later this year allowing increased foreign investment and foreign participation at senior management level."

Chinese companies will keep a majority stake in any joint-venture management operation, as foreign invest-

ment will not be allowed to exceed 49 per cent of the registered capital of an aviation business.

The first joint venture airport is being developed in Wuhan, central China. New World Infrastructure of Hong Kong has agreed to provide capital and management expertise to build the new Tianhe Airport.

Beijing launched a plan to build, expand and upgrade China's airports over five years, starting in 1996. This year alone, the government expects to build or expand 13 country-wide.

Central government spending is focused on investment in air traffic management, flight operations and runways. The CAAC is seeking to draw more foreign funds into long-term investment in building airports.

Under the reform plans, borrowing, leasing and renting will be introduced to build and manage terminal areas. Foreign investment will be encouraged in ground service, aircraft maintenance and hotels.

Mr Xia said more airports would be listed on stock exchanges, to attract fresh funds for expansion. Beijing Capital International Airport will be restructured for international flotation.

PROVISIONING REQUIREMENTS EXTRA CAPITAL MAY HAVE TO BE RAISED TO BUTTRESS SOLVENCY

Thailand tightens bank rules

By Ted Bardacke in Bangkok

Thailand's central bank yesterday tightened provisioning requirements for the country's commercial banks, bringing loan classification rules up to international standards and meeting a key stipulation of the country's agreement with the International Monetary Fund.

The new rules, to be phased in from July 1, are expected to lead to additional provisioning of more than Bt100bn (\$2.5bn) by Thailand's banks this year alone, the central bank said.

Thai banks are scrambling to raise new capital to meet the new requirements with mixed success. They have been given until the end of

2000 to meet the full new provisioning levels.

The hefty new provisions required may force Thai banks to raise more capital than they originally intended, analysts said.

Yesterday Moody's, the international rating agency, downgraded Thailand's five top banks to far below investment grade, saying that "reported levels of delinquent loans do not...reflect the full impairment of banks' asset portfolios" and that the amount of new capital raised so far "is still well below levels needed to restore the system to full solvency."

Under the new rules, banks must set aside reserves equal to 1 per cent

of all lending and 2 per cent for all loans on which one payment had been missed.

Additionally, loans for which a payment has not been made for more than three months will be classified as non-performing or substandard.

Previously borrowers could be behind on payments for six months before the loans were classified as non-performing. The provisioning rate for substandard loans was raised to 20 per cent of the value of the loan from 15 per cent.

Doubtful loans will be those that have not been serviced for six months, compared with 12 months before, while those unserviced for over 12 months will be

regarded as bad debts. Provisioning levels will be 60 per cent and 100 per cent respectively.

Banks will no longer be allowed to book accrued interest as income, nor will they be able to take collateral levels into account when classifying their loans. They will be able to deduct the value of collateral from provisioning amounts but only under much tighter valuation standards.

Finally, the central bank is seeking to crack down on the practice of rolling over bad loans and then classifying them as performing. Loan restructuring will come under intense scrutiny from the central bank.

Power company board replaced

By Ted Bardacke

The Thai cabinet yesterday replaced most board members of the state-owned Electricity Generating Authority of Thailand (EGAT) in a surprise move that could lead to labour unrest at one of the country's largest companies.

A government official told reporters that the cabinet had made the changes to "improve efficiency" but the sensitive announcement was left out of the traditional weekly review of cabinet decisions. Analysts believe the move is intended to pave

the way for the further privatisation of the utility, which last year shelved plans to spin off generating units under pressure from its powerful union.

The new board includes a number of technocrats from other state agencies known to favour further private participation in the electricity sector.

Among them is Piyavast Amranand, secretary general of the National Energy Policy Office, who is considered by many to be Thailand's leading proponent of EGAT restructuring but who is

widely distrusted within the authority.

EGAT is in the middle of Asia's largest independent power producer scheme, a \$6bn programme that will see the authority take most of its new generating capacity from private companies, most of them from Japan, Europe and the US. But a plan to spin off some other plants, either already built or under construction, has stalled and the EGAT board has resisted selling off further stakes in its listed subsidiary, Egco.

In a statement late yesterday, the EGAT union said it would submit a letter of protest today to the prime minister, Chuan Leekpai, asking him to reconsider the decision immediately. It said it did not oppose any particular individuals but warned of its opposition to privatisation.

The EGAT union is Thailand's strongest workers' organisation, with up to 40,000 members. In 1995 workers took to the streets and forced Banham Silpa-archa, then premier, to back-track on a decision to make changes to the EGAT board.

Hong Kong settles down to life with its Beijing masters

John Ridding reports on the concerns of the Democratic party as opinion polls find the 'China issue' is receding in importance

On Martin Lee's wall hangs the front page of a newspaper from 1995. Democrats Surge To Victory, it reads, above a photograph of Hong Kong's Democratic party leader, brandishing a triumphant V-for-Victory sign.

As campaigning gathers pace for elections next month for the territory's Legislative Council to replace the provisional legislature which was installed at the handover last year, Mr Lee plays down the prospect of a repeat performance - at least in terms of seats.

"We [the democratic camp] are counting on the same support as in 1995, that is 35 per cent of the popular vote," he says. But that support, he predicts, would lead to half the number of seats secured in 1995, about one-quarter of the total.

Mr Lee's calculations reflect the rule changes for the forthcoming poll, the first since the territory's



Lee: 'We have no guarantees...'

The 30 seats going to functional constituencies, business or professional groups, will be filled through a sharply reduced franchise, cut from some 2m to about 230,000. The remaining 10 seats will be allocated by an election committee, comprising representatives from business and social groups, and Hong Kong members of mainland political institutions.

Tung Chee-hwa, Hong Kong's post-colonial leader, says the system is in line with the Basic Law, the territory's constitution, and marks a step towards universal suffrage. The widening of the functional constituency franchise under Chris Patten, the last British governor, marked a departure from the purpose of these bodies, the government adds.

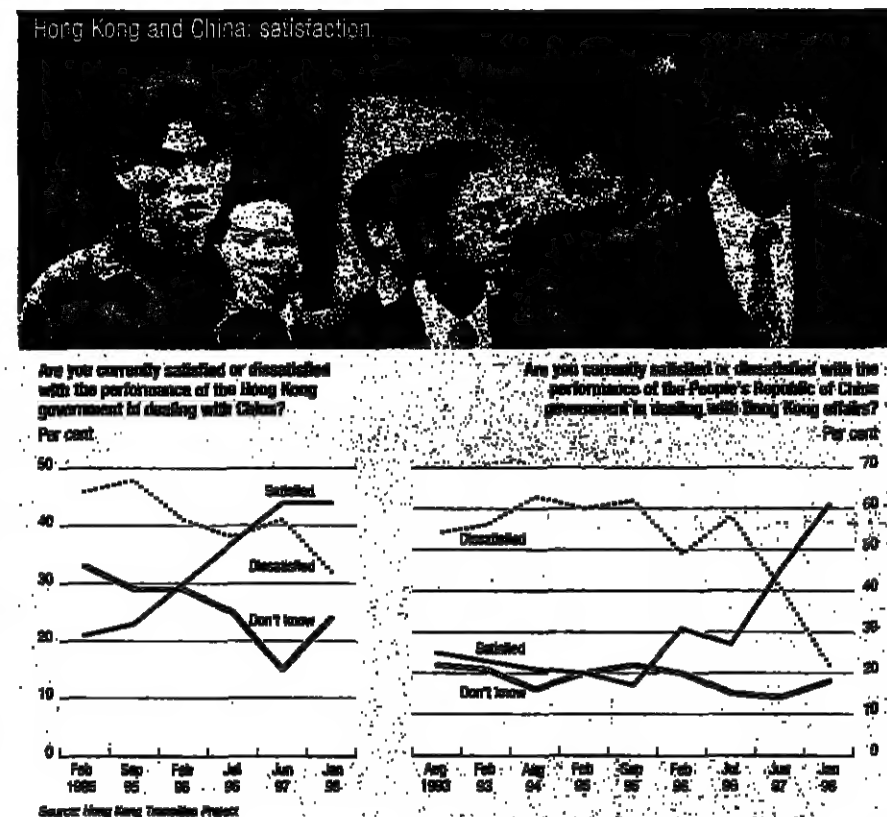
But Mr Lee and his fellow democrats view the rules as a significant step backwards. The complex rules, says the party leader, are designed to curb their presence in the legislature.

That is not Mr Lee's only concern. At the top of his list of concerns is the rule of law, including the recent decision not to prosecute Xinhua, one of Beijing's main organisations in Hong Kong, for an alleged breach of the territory's privacy ordinance. He also condemns a government bill - described by officials as a technical change - which could protect mainland institutions from some Hong Kong laws.

"This bill is a major threat to the rule of law," he says. "The perception will be that Hong Kong is moving towards the mainland system of rule by law, where the state uses laws to control the citizens."

Freedom of speech and press freedom are also on the agenda following strong criticism on Radio Television Hong Kong, the government-funded broadcaster, by a Hong Kong adviser to China.

After a demand for univer-



Financial reserves surplus increases by 10%

Hong Kong's exchange fund, which holds most of the territory's financial reserves, raised its total surplus by 10 per cent in 1997 to HK\$190.22bn (US\$24.5bn), the Hong Kong Monetary Authority announced yesterday, John Ridding writes.

Combined with the foreign

currency assets of the territory's Land Fund, which includes proceeds from government land sales, Hong Kong had total foreign currency assets of US\$96.7bn at the end of February, the third largest in the world.

The size of the reserves has provided protection for the

territory's currency peg to the US dollar, which has survived the wave of devaluations that has swept across the region since summer last year. The reserves cover notes and coins in circulation almost eight times, and Hong Kong dollar M1 money supply almost four times.

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J/FT/01/A

Manila in precautionary IMF deal

By Justin Marozzi in Manila

The Philippines today enters a two-year "precautionary arrangement" with the International Monetary Fund worth \$1.37bn in standby aid, just five days after graduating from its last programme and 35 years of IMF supervision.

Manila has been making much of the successful completion on Friday of the country's 23rd IMF programme in three decades, particularly when the country's larger neighbours - Indonesia, Thailand and South Korea - are all returning to the IMF's fold.

President Fidel Ramos said it sent strong signals to international investors that the Philippines had been less damaged by the Asian crisis than other regional economies, a view increasingly endorsed by economists.

The new precautionary arrangement is designed to shelter the country from any further effects of the crisis in the event of renewed pressure on foreign exchange reserves. At some \$9bn, they represent less than three months' imports.

"The authorities have expressed their intention to treat the arrangement as pre-arranged, and will draw

on the credit only if necessary," the IMF said.

The arrangement contains key macroeconomic aims for the next two years, including the slowdown of growth in gross national product to 3 per cent this year and 5 per cent in 1999. Earlier this week, the government unveiled "sustainable" growth targets for the next 25 years, projecting average GNP growth of 4.9 to 6.1 per cent from 1999 to 2004.

The IMF also seeks the curbing of inflation to 8 per cent in 1998 and 6.5 per cent in 1999, and a fall in the current account deficit to 3.1 per cent of GNP this year

and 2.7 per cent in 1999 (5.2 per cent last year).

Besides comprehensive banking reforms, the country needs to implement a tough package aimed at raising domestic savings, maintaining low inflation, particularly in the public sector, and reducing widespread poverty, the IMF added.

The stock market has put on some 50 per cent since January and the peso has recently stabilised at about 38 pesos to the US dollar from a low of 46.55. But uncertainty still hangs over the country, with presidential elections due in six weeks.

NEWS DIGEST

VIETNAM FINANCIAL TROUBLES

Bail-out for private bank in Ho Chi Minh City

Vietnam's central bank said yesterday it was organising the bailout of a troubled semi-private bank in Ho Chi Minh City, signalling Hanoi's determination to avoid a collapse in confidence in its debt-ridden financial sector. Local banks were hit last year by a string of defaults and corruption scandals, many still unresolved, which stem from unsecured lending by bank officials to business associates.

That has presented the communist authorities with the awkward choice of either allowing some poorly run banks to fail - thus signalling a commitment to encouraging tighter commercial practices - or propping up failing banks to avoid a collapse in already low popular confidence in the banks.

Depositors at the Nam Do joint stock bank, the latest victim, had rushed to withdraw funds in recent days after it became apparent that its liabilities exceeded its assets, put at \$50bn dong (\$3.85bn), the official Saigon Times Daily said. A "soft loan" from the central bank cushioned the impact and ensured the bank could meet its obligations. Jeremy Grant, Hanoi

MALAYSIAN AGREEMENT

Finance companies to merge

Bank Negara, Malaysia's central bank, said yesterday it had secured agreements to consolidate the country's 39 finance companies into eight. The central bank had set its sights, at the start of the year, on having just five or six finance companies by yesterday's deadline and, to encourage this the government was forced to offer a one-year guarantee to protect them against further reduction in the value of the acquired assets.

"It's a good step," said Neil Seker, head of regional economic research at SocGen-Croissy. "The next step will be the banks, which will be a bit more tricky." Sheila McNulty, Kuala Lumpur

AUSTRALIAN TRADE

Export boost cuts deficit

Australia's improved export performance in February helped cut its trade deficit by 42.3 per cent to A\$321m (US\$216m) from January's A\$556m, according to figures released yesterday. The improvement surprised economists, who had forecast an average of about A\$500m, in line with the rapid deterioration in the country's export performance since September.

However, the Australian Bureau of Statistics survey showed exports of goods and services rose 2 per cent month-on-month, while imports remained virtually flat. In spite of the better than expected figures, economists stuck to forecasts that the downward trend would continue, largely because of the Asian economic crisis. Mark Mulligan, Sydney

TRADE ACCOUNT

Thai exports fall 7.9%

Thai exports fell to \$4.19bn during January, down 7.9 per cent in dollar terms over the same period a year before and down 15.8 per cent from a month earlier. The figure shows that Thai exporters have yet to exploit fully the competitiveness edge gained from the baht's depreciation in the middle of last year.

Still, the country's trade account was \$869m in surplus during January, as imports fell 45.1 per cent year-on-year to \$3.32bn. Many Thai exports have a high import content. The current account also posted a surplus of \$1.22bn, up from the \$1.18bn surplus shown in December. Ted Bardacke, Bangkok

PAKISTAN PRIVATISATION

Sharif orders faster sell-off

Nawaz Sharif, Pakistan's prime minister, has ordered that the privatisation programme be speeded up in response to growing criticism that efforts to turn around the public sector are faltering.

The move follows growing losses at state companies such as the Water and Power Development Authority, the largest power utility, which is owed at least Rs39bn (\$844m) by consumers and other companies. Officials say Pakistan Railways has run at a loss for almost a decade.

"There is a haemorrhage in the public sector which has to be stemmed in order for the country to pull out of the continuous cycle of fiscal and financial indiscipline, mismanagement and borrowing," said Mr Sharif, in a speech to a privatisation conference in Islamabad this week. Farhan Bokhari, Islamabad

FINANCIAL ADVISORS

The Export-Import Bank of the United States, official credit agency of the U.S. Government, is seeking financial advisors to assist in structuring and negotiating limited recourse project finance transactions in developing countries. Solicitation documents will be available March 30, 1998.

To qualify for contract awards, a financial advisory firm must have extensive international experience in limited recourse project finance in two or more of the sectors and developing countries in which Ex-Im Bank's business is directed. The firms must have served as a financial advisor to sponsor or lender groups, served as an arranging bank or technical bank, or have direct lending experience in projects in developing countries that have achieved financial close. Additionally, the firm must demonstrate knowledge of export credit agency policies and Organization of Economic Cooperation and Development and Berne Union arrangements.

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LETTERS OF CREDIT INDONESIA COMPANIES TO USE PILOT PROJECT BACKED BY \$1bn FROM CENTRAL BANK

Jakarta push to lift trade confidence

By Sander Thoenes in Jakarta

Tired of waiting for bilateral trade guarantees, Indonesian importers and manufacturers will seek to pick up business this week using \$1bn in government funds as backing for their letters of credit.

Indonesian imports, and many exports, collapsed early this year after most foreign banks began rejecting letters of credit following concern over the viability of Indonesian banks. Even a blanket government guarantee covering commercial banks was dismissed because of the heightened risk.

Now, Anton Supit, chair-

man of the Indonesian Footwear Association, said 16 textile companies and eight shoe producers were eligible for a pilot project to open letters of credit with six state banks, which would in turn have the letters confirmed by 10 co-operating foreign banks.

As backing for the letters, Bank Indonesia, the central bank, has already deposited \$100m in each of five foreign banks and will soon deposit another \$100m each in five other banks. Most of the funds will be used to back imports of foods and medicine but products such as leather, needed for shoe manufacturing, will also be

eligible. Mr Supit said the aim of the project was to show that some Indonesian banks and companies could still meet obligations.

Many are still importing, using Singaporean letters of credit and full cash deposits. "It's meant to revive confidence," Mr Supit said. "So that other countries start to believe in us again."

"It's a good start," said David Hawkins, chief executive in Jakarta of Standard Chartered, one of the participating banks. "At least it gets some trade going. It's limited in shape but it should go ahead quite quickly."

"There is no real risk for

the banks because the cash is already there."

Mr Supit welcomed offers for bilateral trade guarantees but said only Australia and the US had so far come forward, and even such guarantees had only a limited effect in reviving trade.

The US guarantee would only back US products, such as leather, while most Indonesian shoe manufacturers used Argentine or Korean leather. This was cheaper and of a different quality, he said.

More importantly, Mr Supit said, bilateral guarantees applied only to the foreign bank which confirmed a letter of credit, but did not

give Indonesia's cash-strapped banks any incentive to issue such letters.

Most still require 100 per cent cash deposits, something only the most successful companies can afford.

Many bilateral trade guarantee schemes have been held up until Indonesia agrees with the International Monetary Fund on a renegotiated reform package. Agreement is expected later this week.

Only about \$5m of the \$400m US guarantee and none of the unlimited Australian guarantee has been drawn on this year. Japan's offer of \$4bn includes \$1bn in pre-export financing that

is not tied to Japanese products, and Germany has earmarked DM60m (\$27.4m) for supporting exports by small and medium-size enterprises.

Singapore offered \$20m. It had proposed a multilateral guarantee to include pre-export financing, but other nations preferred bilateral export credits which are easier to defend at home.

Indonesian exporters also face escalating shipping costs as they have to bring in empty containers due to the fall in imports.

The Indonesian Textile Association said it had found only half the 300 containers needed this week for garment shipments.

NEWS DIGEST

CONTROL OF BSE

EU puts off controversial livestock ban to January

European Union nations yesterday postponed a ban on imports of potentially infectious livestock parts until January 1, 1999. However, farm ministers asked the European Commission to suggest changes to a proposed ban which had been due to come into effect today as part of an attack on BSE, or mad cow disease. The decision offers some relief to the US which had warned of the effects of a ban on trade. But there will be frustration in Washington that the threat of a ban remains.

However, the Commission is highly sceptical of the chances of producing changes which the 15 EU member countries can agree, even by next January. Showing signs of irritation, Franz Fischler, farm commissioner, said it remained a mystery what member states favoured. EU countries have several times rejected the Commission's advice on the ban and did so again yesterday when they decided on a postponement to January 1. Instead the Commission had wanted to draw up a new proposal which would then have been debated by parliament and EU nations. Michael Smith, Brussels

MOBILE PHONE TECHNOLOGY

NEC sets up UK venture

NEC, the Japanese electronics group, is establishing a joint venture with ERA Technology of the UK to develop infrastructure for the next generation of mobile phones. The joint venture, to be called Telecom Modus, will be located in Leatherhead, Surrey, with an initial capitalisation of £1m and is expected to employ more than 100 staff by 2000.

Telecom Modus will develop base stations for mobile phone systems capable of carrying a broad range of information from conventional conversations to full motion video. The European industry has just agreed the new system, known generically as UMTS, will be based on similar technology to that being developed for Japan's largest mobile operator NTT DoCoMo. ERA Technology, now an independent company specialising in electrical, electronic and materials engineering, has expertise in the computer software used in radio communications and in "intelligent" antennas for mobile phone systems. Alan Carr, London

INTELLECTUAL PROPERTY RIGHTS

US penalises Honduras

Charlene Barshefsky, the US trade representative, has announced trade sanctions against Honduras for "overt and unacceptable" piracy of US videos and television signals. Duty-free treatment is to be withdrawn from \$5m of exports to the US, including fruit and vegetables, in retaliation for Honduras' failure to protect intellectual property rights. Ms Barshefsky said more action could follow if offending television stations did not stop broadcasting pirated signals. Honduras had been given a further 60 days to respond to concerns, but piracy continued "as a matter of practice", said Ms Barshefsky.

The trade action follows long-standing complaints from the Motion Picture Association, which represents seven Hollywood studios, that films produced by its members were being broadcast illegally on two Honduran television channels. Honduras has said it has acted as far as it can against the owner of the channels responsible within existing laws. Some \$165m of Honduran exports have been allowed into the US duty-free each year. James Wilson, Panama

Egypt looks to Jordan sell-off deal

By Randa Khairat in London and Mark Hubbard in Cairo

An Egyptian financial company is set to win the mandate to assist in the privatisation of Jordan's cement producer, boosting Egyptian financial companies' efforts to expand in the rest of the Arab world and establish Cairo as a regional financial centre.

EFG Hermes, the leading Egyptian investment bank, is expected to be selected over nine international investment banks, including Salomon Smith Barney, Citibank and Merrill Lynch, to advise the Jordanian government on the 33 per cent sale of Jordan Cement Factories.

EFG Hermes will look for a strategic partner or float the shares on the Amman stock exchange.

Jordanian officials said EFG Hermes' experience in the privatisation of Egyptian cement producers gave it a high score on technical evaluation, in addition to having offered a highly competitive price.

EFG Hermes handled the 1996 sale of 1m shares in Egypt's Amreya Cement company.

"We elected to go alone [on this deal] rather than jointly with another company, because we felt our experience in Egypt had given us the expertise to handle this sale," said Hassan Helikal, director of investment banking at EFG Hermes.

"We can move into any country where business is relatively open, and Jordan is the one we have started to focus on," Mr Helikal added.

Jordan Cement Factories, with yearly production of 4m tonnes, enjoys a monopoly until the year 2001.

The company is estimated to have made JD8m (\$11.4m) in profits on JD77m in sales last year. The government owns 49.6 per cent of the company, with most of the rest in private sector hands.

Cement privatisation is only one of several government sales planned this year. The government is taking over the debts of Royal Jordanian, the national airline, and spinning it off into a debt-free subsidiary.

Some 40-60 per cent of the shares of the subsidiary will then be sold. Jordan is also selling 40 per cent of its telecoms company to a strategic partner, and the government is currently evaluating two offers on the table.

For an Arab investment bank to participate in the privatisation in another Arab country is just one sign of the efforts under way to integrate Arab markets and economies.

With a successful privatisation programme and a stock exchange worth \$300bn in capitalisation, Egypt is billing itself as the economic leader of a group of Arab countries which have stabilised their economies.

Egyptian officials say this group includes primarily Tunisia, Morocco and Jordan, but also Oman and the United Arab Emirates.

Egyptian officials say Cairo will be the regional financial market for these economies, with companies from other Arab states eventually listing their shares and raising capital on the Cairo stock exchange.

This role is also being claimed by Beirut, the region's former financial centre. Lebanese investment banks are also trying to expand into other Arab markets.

FAA planning fees for air traffic control

By Arkady Ostrovsky in London

The Federal Aviation Administration is to ask the US Congress next month to approve plans to introduce fees for airlines using American air traffic control.

At present the US does not charge for the use of airspace or traffic control services. Jane Garvey, the FAA's new chief said: "It is a controversial proposal and undoubtedly it will generate a great deal of discussion, both within the industry and in the Congress."

The proposal involves setting up a performance based organisation (PBO), which would run traffic control and charge airlines for its use. "The principle is simple: if you use the service you have to pay for it," Ms Garvey said. Although the new body would be part of the FAA, it would be run as a private institution with its own board and a chairman. "I think of it as a public-private body."

The initiative is the result

of the review by the national civil aviation commission, set up by Congress to review FAA's operations.

At present FAA is funded by Congress and the Aviation Trust Fund, which receives money from petrol and ticket taxes. Under the new plan the taxes would be replaced by fees paid by airlines.

The FAA has no direct control over the Aviation Trust funds which are often used to reduce the budget deficit, rather than support aerospace development.

The new system would give the FAA greater control over its funding and would allow it to invest in a modernisation programme. "We have to know what is coming and PBO would give us a stable and predictable funding stream," she said.

Ms Garvey did not specify how much money PBO could generate, but the FAA budget for 1999 is estimated at \$9.3bn, including \$6.6bn from Congress.

In 1994, the FAA tried to privatise air traffic control,



Jane Garvey: "It's a controversial proposal"

Ashley Ashwood

but the proposal was rejected by Congress, which observers say, was "totally taken by surprise". Last year the FAA tried to introduce over-flying fees for foreign aircraft passing through its airspace. But the move caused an international outcry and several airlines including British Airways as well as Australian, New Zealand, South Korean, German and Canadian carriers successfully challenged the

legality of the FAA's action. Ms Garvey said the problem was not the principle of charging airlines for using American airspace, but the way in which the fees were set up. The FAA claims it has a good chance of pushing the legislation through because the proposals are the outcome of the Congress-initiated review.

"The critical question is how you establish the user fees. FAA does not have a

solid cost accounting system. Right now we are working on it," she said. Ms Garvey said the new system could be introduced by 2001. The FAA, which was criticised for lack of action in addressing the year 2000 computer problem, which puts airline safety at risk, said it was now dealing with the problem. She said the upgrading software and replacing hardware could cost the FAA up to \$500m.

Cuba launches bid to join Lomé countries

By Canute James in Kingston and Pascal Fletcher in Havana

Cuba has told the European Union it wants to be an observer in negotiations between the EU and the Africa, Caribbean and Pacific (ACP) group of countries on a new post-Lomé trade and co-operation accord.

The group of 71 developing countries have a trade and aid treaty with the EU and expect to conclude a new agreement to replace the current pact, which expires in 2000.

"What we want is to participate in the process of negotiations," a Cuban foreign ministry official said. "The idea was that Cuba would take part as an observer in the EU-ACP negotiations, due to start in September, through the Caribbean grouping Cariforum."

Cuba's foreign minister, Roberto Robaina, had expressed Havana's interest in taking part in the negotiations in letters sent to the presidents of the EU and of the ACP group.

But the Cuban official said it was still too early to talk of full Cuban membership of the ACP group, which, from the procedural point of view, was not possible for the time being. A decision on Cuba's possible membership would have to come at a later date, perhaps when the new post-Lomé accord was in place.

Cuba has also said it wants to be the 16th member of the Caribbean Community (Caricom). Ricardo Cabrisas, Cuba's foreign trade minister, told a meeting of Caribbean trade ministers in Trinidad that the European Commission and the African and Pacific members of the ACP had been informed of Cuba's desire to join the group.

Caribbean members of the ACP will support Cuba's membership of the group, but this could be blocked by "political conditionalities" which determine membership, according to Caribbean officials.

There is also concern in

the region that Cuba, a major sugar producer, should not be given preferential access to the EU's sugar market. Under the Lomé Convention, ACP members have guaranteed markets in the EU for a range of commodity exports.

Cuba's full membership of the ACP group would be likely to require special trade or quota arrangements to cater for the communist-ruled island's sugar and rum production. A precedent for such special arrangements already existed in the case of an existing Caribbean ACP member, the Dominican Republic.

"Cuba wants to be an indivisible part of the Caribbean in the arrangements that will supersede the current Lomé Convention," Mr Cabrisas said.

Cuba's relationship with Caricom has been limited to a joint commission for technical co-operation. Havana has asked Caricom to start talks on a free trade treaty, and the community's prime ministers will discuss the request when they meet in July. Caricom is made up of the English-speaking countries of the region, Surinam and Haiti. It has 13m people.

Caribbean members of the ACP support Cuba's request for membership of the group, said Edward Carrington, secretary general of Caricom. However, there are several problems which could hamper Cuban membership. "Cuba could face an insuperable obstacle from the Lomé Convention," he said. "There are provisions in the Convention which deal with democracy, human rights, rule of law and all of these concepts which all member states of the ACP are supposed to subscribe to."

Cuba's membership of the ACP would help it cushion the effects of the 37-year-old US economic embargo, and would help it to integrate itself into the global economy, Mr Cabrisas said. His country has been forced to make "extraordinary" efforts to secure its economic existence in the face of the embargo, he said.

Annual General Meeting of AB Volvo (publ)

Shareholders in AB Volvo are summoned herewith to the Annual General Meeting in Göteborg, Lisebergshallen, entrance from Örgrytevägen, Wednesday, April 22, 1998, at 2:00 p.m.

1. Opening of the Meeting
2. Election of Chairman of the Meeting
3. Preparation and approval of the list of shareholders entitled to vote at the Meeting
4. Approval of the agenda
5. Election of minutes-checkers and voting register checkers
6. Determination of whether the Meeting has been duly convened
7. Presentation of the financial statements for the year and the auditors' report
8. Adoption of the income statement and balance sheet and the consolidated income statement and consolidated balance sheet
9. Motion on disposition to be made of the Company's profits or losses as shown in the Balance Sheet adopted by the Meeting
10. Motion on discharge of the Board of Directors and of the President from liability for the fiscal year
11. Determination of the number of Board members and deputy members to be elected by the Meeting
12. Determination of the number of auditors and deputy auditors to be elected by the Meeting
13. Determination of the fees to be paid to the Board of Directors
14. Determination of the fees to be paid to the auditors
15. Election of the Board of Directors
16. Election of auditors and deputy auditors
17. Election of members of the Nominating Committee

Motions

Point 9. The Board of Directors proposes that the dividend shall be paid in cash in the amount of SEK 5.00 per share.

April 27, 1998 is proposed as the record date to receive the cash dividend. Payment of the cash dividend is expected to occur through VPC (Swedish Register Securities Center) on May 5, 1998.

Point 11. The Nominating Committee elected at the 1997 Annual General Meeting proposes 8 members and no deputy members.

Point 12. The Nominating Committee proposes two auditors and two deputy auditors.

Point 13. The Nominating Committee proposes a fixed fee of SEK 2,975,000 to be distributed among the members in accordance with the decision of the Board.

Point 14. The Nominating Committee proposes fees based on invoices for the examination of the accounts, management and audit of the consolidated financial statements.

Point 15. The Nominating Committee proposes re-election of Per-Olof Edlsson, Håkan Friestinger, Sören Gyll, Tom Hedelius, Leif Johansson and Sören Mannheimer and new-election of Lars Ramqvist and Finn Johansson.

Point 16. The Nominating Committee proposes new-election of Authorized Public Accountants Olof Herolf and Ole Karlsson as auditors, with Authorized Public Accountants Olof Enerbäck and Klas Brand as deputy auditors.

The Nominating Committee's proposals, as presented in the items above, have the support of shareholders representing more than half of the votes and more than one-third of the share capital in AB Volvo.

Right to participate in the Meeting

Participation in Volvo's Annual General Meeting is limited to shareholders who are recorded in the share register on April 9, 1998 and who advise Volvo not later than 12:00 noon (Swedish local time) on

April 17, 1998 of their intention to participate.

Share registration

Volvo's share register is maintained by Värdepapperscentralen VPC AB (Swedish Securities Register Center). Only owner-registered shares are listed in the names of the shareholders in the share register. To be entitled to participate in the Annual General Meeting, owners of shares registered in the name of a trustee must have the shares registered in their own names.

Shareholders who have trustee-registered shares should request the bank or broker holding the shares to request owner-registration, so-called voting-right registration, several banking days prior to April 9, 1998. Trustees normally charge a fee for this.

Notice to Volvo

Notice of intention to participate in the Meeting may be given

- by telephone to +46 31 59 00 00
- or in writing to: AB Volvo (publ) Legal Department SE-405 08 Göteborg, Sweden

In providing such notice, the shareholder should state

- name
- personal registration number (where applicable)
- address and telephone number

Shareholders who desire to participate in the Meeting, must submit notice prior to expiration of the notice period, not later than Friday, April 17, 1998, 12:00 noon (Swedish local time).

VOLVO

Handwritten signature or stamp at the bottom of the page.

BRITAIN

STRENGTH OF THE POUND GOVERNMENT FOCUSES ON POLICY OF INSTITUTIONS IN LENDING TO EXPORTERS

Minister issues appeal to banks

By Robert Gyles and Richard Adams in London

Banks and financial institutions should do what they can to help manufacturers suffering from the strength of the pound, Gordon Brown, chancellor of the exchequer, told MPs yesterday. Facing sustained questioning from members of the House of Commons Treasury committee, the chancellor insisted that he would not take short-term measures to push down the pound, including intervention in the foreign exchange market.

"I don't think that, despite the pressures and all the temptations there are, we

should be in any way diverted from the long-term objectives," Mr Brown said.

Sterling rose another quarter of a penny to close in London at DM3.097. Against a trade-weighted basket, it rose 0.1 points to 108.8 per cent of its 1990 value, another nine-year high.

The chancellor called again on industry to avoid high pay settlements that might force the Bank of England, the UK central bank, to raise interest rates more than necessary.

For the first time he made the financial community a target of his comments, urging banks to take sterling's strength into account

when deciding their lending policy towards exporters. "We should all be long-termists now," Mr Brown said. He insisted that the government had played its part in rebalancing economic growth by tightening fiscal policy.

Mr Brown pointed out that two-thirds of sterling's appreciation had taken place before the Labour government took office almost a year ago. He added that the pound had changed little against the dollar and that both had risen relative to weak European currencies.

Meanwhile, Adam Turner, director-general of the Confederation of British Indus-

try, called on the Bank of England to keep a lid on interest rates rises and help exporters suffering from the strength of sterling.

"The Monetary Policy Committee must be aware just how severe the problems are for the export sector," Mr Turner told a CBI meeting in northern England. "What we need now from the Bank of England is a signal that interest rates are at their peak. That could help put the pound on a downward path to a more realistic level."

Mr Turner said that UK exporters had dealt with the rising pound by cutting

prices. "It is now clear that many have done all they can in the short-term and that a severe setback to exports will result from sterling's present level," he said.

● The Birmingham Chamber of Commerce's latest quarterly report showed, yesterday that the city, the second largest in England, was "on the brink of recession", said Richard Ireland, president of the chamber, the UK's biggest. Three out of 10 companies reported falling UK orders because of cheap imports.

Stafford, Page 14
Lancaster, Page 16
Cardiff, Page 25

Disputes cloud race for Ireland deal

By John Murray Brown in Belfast

Tony Blair, the prime minister, moved to head off a crisis in the Northern Ireland peace talks yesterday as big differences emerged over proposals for an assembly for the region.

Amid signs that the process may be faltering, Mr Blair held discussions with John Hume, leader of the moderate nationalist Social Democratic and Labour party yesterday, and is due to meet Bertie Ahern, the Irish prime minister, in London today to finalise the outline of a deal which the two governments hope to present to the parties later this week.

As the talks turned to the issue of the future governance of Northern Ireland, nationalist politicians described unionist suggestions for a committee-style government for the region based on proportionality, as little more than "a glorified county council".

At the start of the day, David Trimble, leader of the Ulster Unionist Party, the largest pro-British party, broke with the convention of confidentiality governing the talks to lambast the cabinet-style government proposed by the SDLP.

Separately, Mr Trimble

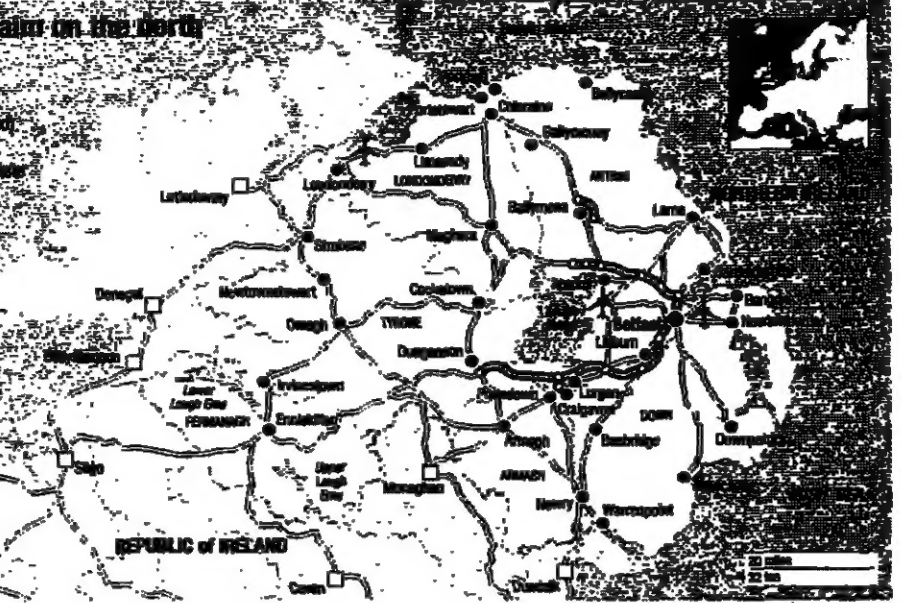
Ireland: the south's claim in the north

Article 2: The national territory consists of the whole island of Ireland, its islands and the territorial sea.

Article 3: Pending the reintegration of the national territory, and without prejudice to the right of the parliament and government to exercise jurisdiction over the whole of that territory, the laws enacted by that parliament shall have the like area and extent of application as the laws of the Republic of Ireland and the like extra-territorial effect.

was involved in a heated exchange with David Andrews, the Irish foreign minister, over the proposed amendments to territorial claims over Northern Ireland, which appear in two articles of the constitution of the republic.

Mr Trimble said: "To define the nation as all the people on the island, and to define the territory as being the entire island is failing to recognise the existence of Northern Ireland."



As new fault lines emerged, Mr Blair held separate telephone conversations with Lord Alderdice, leader of Northern Ireland's non-sectarian Alliance party, and Gerry Adams, president of Sinn Féin, political wing of the Irish Republican Army. Mr Blair's staff said he would contact the two small anti-nationalist "loyalist" parties later in the week.

A spokesman from Mr Blair's office said the discus-

sions were "part of the continuing process of taking forward the talks".

The extent of the acrimony between the parties was underscored when Lord Alderdice described the unionist proposals as "unworkable and unrealistic", accusing Mr Trimble of negotiating through the media. An SDLP spokesman said there were "significant gaps between the parties; it shouldn't be underestimated". In publicly airing

his misgivings outside the talks, Mr Trimble is adopting a hard line which officials fear will be difficult to retract from.

With only nine days to go to the deadline for a settlement set by George Mitchell, the former US senator chairing the talks and who yesterday set a final schedule of meetings, the latest arguments will cast new doubts over whether the talks participants can reach agreement by April 9.

Sony and Warner to pool distribution

By Alice Hawthorn in London

Warner Music and Sony Music, two of the world's biggest record companies, are pooling facilities to create the UK's largest distribution centre for music, videos and electronic games.

It is the first time two multinational music groups have joined forces in UK distribution.

The decision by Warner, part of Time Warner, the US entertainment group, and

Sony of Japan, reflects growing pressure on large companies to control costs in mature markets.

Most have already streamlined their manufacturing operations by closing local production plants and opening centralised facilities to supply their records across Europe.

Some have pooled distribution for their subsidiaries in some European countries, but not the UK, because of the market's size and its distance from mainland Europe.

Fred Burger, chairman of Sony Music (UK), which includes soul band Jamiroquai among its artists, said his company started reviewing its distribution arrangements early last year.

It sold its video manufacturing operation at its main site at Aylesbury, 55km from London, leaving it space to expand its distribution centre there.

After the disposal Sony started negotiations with rival Warner, the company behind the group Simply Red and Irish singer Eurythmics, to combine their distribution at an expanded facility at the site.

Sony and Warner agreed to form The Entertainment Network, a joint venture of which they will own half each.

Warner will move its distribution from London to the Aylesbury site, which will also distribute videos for

its misgivings outside the talks, Mr Trimble is adopting a hard line which officials fear will be difficult to retract from.

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The decision by Warner, part of Time Warner, the US entertainment group, and

Some of Warner's employees are expected to transfer to Aylesbury, including Gwen Pearce, operations director, who has been appointed managing director of the joint venture.

The joint venture will also handle distribution for other music, video and games companies.

Each of the 1,450 detectives on the squad will be asked to sign a "loyalty" contract designed to keep out corrupt officers.

The joint venture will also handle distribution for other music, video and games companies.

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The joint venture will also handle distribution for other music, video and games companies.

Low-fare airline may sidestep legal challenge

By Michael Skapinker, Aerospace Correspondent

British Airways is expected to sidestep legal challenges to its new low-cost airline by announcing that it will fly to destinations which are not served by other no-frills carriers.

BA is expected to announce this week that its new airline, called Go, will fly from London's Gatwick airport to Rome, Milan and Copenhagen. UK fares to all three destinations are expected to be £100 (£167 return).

Debonair, which is based at London's Luton airport, flies to Rome. However, EasyJet and Ryanair, Go's principal rivals, do not serve any of the three destinations.

EasyJet has complained to the European Commission that BA is abusing its dominant position by launching Go. EasyJet said it fears that Go will drive it out of business. Commission officials have refused to act, however, saying they can only investigate the complaint if Go can be shown to be damaging competitors' business.

Go is expected to add new destinations later in the year. But by initially avoiding routes such as Amsterdam, Barcelona, Nice and Stockholm - which are served by EasyJet and Ryanair - BA appears set to avoid any legal challenge

until its business is well established.

Go argues that it will be run independently of BA, although BA is set to underwrite the leases on the eight aircraft that the low-cost carrier will eventually use.

BA opted to enter the low-cost market after deciding that it could no longer ignore competition from Ryanair, EasyJet and Debonair, the new airlines, set up to take advantage of the completion last year of the single European aviation market, have been undercutting established carriers by offering low fares and no meals on board.

EasyJet has also complained to the Commission about BA's plans to join National Express in running the Eurostar Channel tunnel rail service between England and France.

Stelios Haji-Ioannou, EasyJet's chairman, yesterday wrote to Karel Van Miert, EU competition commissioner, saying he feared that BA planned to take a substantial equity stake in Eurostar. BA decline to comment.

Mr Haji-Ioannou wrote: "I believe that there is a pattern of behaviour emerging whereby every time British Airways feels there is a potential threat to their dominant position, such as EasyJet or Eurostar, they either try to eliminate or acquire it."

Law firm agrees Andersen link

By Robert Rice, Legal Correspondent

Wilde Sapte, one of the UK's leading law firms, yesterday reached agreement with Arthur Andersen to join the accountant's global law firm network.

Wilde Sapte will merge with Andersen's UK law firms, Garretts and Dundas & Wilson, in September. The new UK firm will have 750 lawyers and a turnover this year of £100m (£167m), making it the UK's sixth largest law firm.

The merger is a boost for Andersen in its attempt to become one of the leaders in continental legal services worldwide. It brings to an end an 18-month search for a leading City of London banking and financial law prac-

tice to join its international law firm network, which already has 74 offices in 31 countries.

Steven Blakeley, managing partner of Wilde Sapte, will become the managing partner of the new firm and of Andersen's English law practice worldwide. Mark Andrews, senior partner of Wilde Sapte, will be the senior partner.

The new firm is expected to be called Wilde Sapte Andersen in the short term, although the Garretts name may be retained in the regions because of the growing strength of its brand.

Internationally, several Wilde Sapte offices will merge their practices with members of the Andersen Worldwide network.

In Hong Kong Wilde Sapte

will merge with Ede Charlton, creating one of the strongest commercial practices in the region.

In Paris, Wilde Sapte will combine with Archibald Andersen, and in New York, J & A Garrigues Andersen and Wilde Sapte will combine their representative offices. Wilde Sapte's Tokyo office will give Andersen legal presence in Japan for the first time.

Nick Prentice, Andersen's head of European legal services, said the accountant's aim was to be able to provide local law, English law and New York law services in the main jurisdictions around the globe.

"Our worldwide strategy is to have a significant share of the top quality and high-value transactions so that

ultimately we are seen as a natural provider of legal services to the global 1,000 companies," he said.

Mr Prentice admitted that New York law capability remained a problem in the short term. Accountants are still not allowed to form alliances with law firms in the US, so once the Wilde Sapte merger has bedded down the new UK law firm might look for a merger with a US firm, he said.

Mr Blakeley said joining Andersen would give Wilde Sapte the ability to tackle the global legal services market. The accountant's resources would enable it to attract top quality corporate finance and capital markets lawyers to complement its strong banking, finance and insurance practices.

Detective team aims to 'disrupt' criminals worldwide

By Simon Buckley, Social Affairs Correspondent

The new UK National Crime Squad "will become known worldwide for its ability to disrupt those people whose criminal activities threaten this country's economy and quality of life," its chief said yesterday.

The squad, to be launched today, will be first UK police organisation of modern times designed to tackle serious and organised crime throughout England and Wales.

Roy Fennore, who will be its first director general after 35 years as a detective in the Metropolitan Police Service in London, said: "We live and work in a global village and organised crime does not stop at country, regional or national borders."

The squad will have a unified command and an annual budget of £50m (£150m) provided by a compulsory levy on local police forces. It will take over from the six regional crime squads to target national and international organised crime.

Some 1,450 detectives from the 43 existing police forces will be seconded to the squad for up to five years to hunt criminals dealing in drugs, arms, organised paedophile activity, counterfeiting and illegal immigration.

The body will replace the regional crime squads established in 1984. It will work with local police forces and other agencies, such as the new Europol expected to be established later this year, the Customs and Excise investigation service and the National Criminal Intelligence Service, which leaves Home Office control today to stand independently.

The National Crime Squad will focus on the 180 people listed secretly on the National Criminal Intelligence Service ranking of top criminals. These are thought to be the core organisers, described as "heads and lieutenants", of leading organised crime gangs in the UK. Three-quarters of these are believed to be involved in drug trafficking.

Initially it will concentrate on these suspected villains rather than on individual criminal acts.

The squad will be accountable to a 17-member service authority, with representatives from local police authorities, the Association of Chief Police Officers and the Home Office. It will be chaired by Sir John Wheeler, a former minister for Northern Ireland.

Each of the 1,450 detectives on the squad will be asked to sign a "loyalty" contract designed to keep out corrupt officers.

NEWS DIGEST

BCCI AFTERMATH

Liquidators win judgment for \$10m against fugitive

The liquidators of Bank of Credit and Commerce International have won a judgment for more than \$10m against a former employee who they claim misappropriated the bank's funds. Moazz Haque had handled the accounts at BCCI of Control Securities, the UK property group - since renamed Ascot - formerly headed by Nazim Virani. Mr Virani spent 15 months in prison after being convicted of false accounting and furnishing false information in relation to BCCI.

The Serious Fraud Office issued an arrest warrant for Mr Haque in April 1992, by which time he had already fled to Pakistan, where he remains a fugitive. In handing down the claim in the High Court in London, the judge cited Mr Haque's refusal to give evidence either in person or by video link.

The judgment may not bring much immediate gain for creditors unless the liquidators, Deloitte & Touche, locate UK assets apart from Mr Haque's pension fund. Clay Harris, London.

ISLAND OF JERSEY

Draft law for financial services

Jersey's financiers are to help formulate a new law that will regulate the island's stockbrokers, investment advisers and discretionary investment managers. Up to 250 members of the £250m (£350m) finance industry will be asked for their views and opinions on the final drafting of the Investment Business (Jersey) Law which was lodged in draft form with the island's government yesterday. Jersey is the largest of the Channel Islands between England and France.

The law, which broadly follows the UK's Financial Services Act, will and the special arrangement whereby Jersey stockbrokers are allowed to be members of the London Stock Exchange even though they are not subject to the same level of regulation as their UK counterparts. Philip Jeune, Jersey.

YEAR 2000 COMPUTER PROBLEM

Banks 'will miss timetable'

A survey of the world's largest banks conducted by E Banker, a technology review published by The Banker magazine, found that half will not have prepared all the computer systems critical to their business by the end of this year - the timetable recommended by many banking regulators to ensure that enough time is left for testing for the "millennium bomb" which may confuse computers when they change their date digits to "00" in 2000.

Those who will still have work to do next year include some of the world's largest banks. Credit Agricole, ranked third in the world by the size of its equity base, said 50 per cent to 75 per cent of its critical systems would be millennium-compliant by the end of 1998.

Computer Sciences Corporation, a leading US-owned computing services company, is seeking to fill 1,000 new technology vacancies in the UK. The company, which recently scooped being taken over by Computer Associates, another US group, said many of the new jobs will specialise on tackling the millennium "bomb". George Graham, London.

RAILWAY COMPETITION

Date for sector 'newcomers'

Train operating companies and newcomers to the railway industry will be able to launch new rail services in competition with the existing privatised franchisees from September 1999, John Swift, the rail regulator announced yesterday. This is expected to lead to the introduction of new services to airports and between large regional centres which currently have no direct links. One plan is for a new service linking north and south Wales. "I am satisfied that robust criteria and procedures can be put in place to prevent the emergence of 'rail wars' and other activities that might not benefit passengers," he said. New operators will be able to compete for up to 20 per cent of the existing revenues of existing operators from the start of the winter (October-February) timetable next year. Charles Batchelor, London.

WORLD CUP SOCCER

Fears over 'official' knives

World soccer's governing body Fifa has asked its marketing partner, ISL, to withdraw from sale knives with the official World Cup logo after the British government warned they might be bought by hooligans bent on violence. Although hundreds of the 10cm-blade weapons have been on sale in French shops in recent months, sensitivity about them has been heightened in the aftermath of last weekend's outbreak of violence involving English fans, which led to the death of one of them. Chris Smith, the chief UK minister of sport, said the government was bringing "a lot of pressure through diplomatic channels" to get the knives removed from sale. Jimmy Burns, London.

CORRECTION

Millennium sponsorship deal

Guinness's millennium sponsorship deal with the Old Royal Observatory, reported yesterday, will not involve renaming Greenwich Mean Time "Guinness Mean Time". This detail was included in a press release sent to the FT in London by Guinness on March 29. The release was apparently intended as part of an April 1 spoof.

Unions see confrontation with Blair as a defining moment

The prime minister's drive to woo business has made him appear hostile to statutory workplace representation, says Robert Taylor

John Monks, general secretary of the Trades Union Congress, has described the confrontation with the government over statutory recognition of trade unions by employers as a "defining moment".

The unions want a law that will enable them to represent their employees in bargaining where there is "majority support among the relevant workforce".

In opposition, the Labour party committed itself to this in its manifesto for the national election nearly a year ago. The TUC believes a

recognition law will help reverse the decline in the union movement over the past 18 years. Today, no more than 20 per cent of private sector employees belong to a union and collective bargaining covers well under half the workforce.

Tony Blair, the prime minister, told the TUC last September to seek a voluntary deal with the Confederation of British Industry - the largest UK employers' lobby - that would provide common ground, make business sense and maintain workplace stability.

In December, the TUC and the CBI presented a document to Mr Blair that laid out points of agreement and disagreement. Union leaders are convinced that what they saw as the subsequent toughening of the CBI's stance was due to encouragement from employers were receiving from Mr Blair's office. Business delegations were pleased by warm words from Geoff Norris, the prime minister's adviser on industrial relations.

The TUC has grown increasingly restive as a result. It relies on support from Margaret Bockett, the chief industry minister, and above all from Ian McCartney, her junior minister, to ensure that the promised law is to their liking. The TUC is lobbying with some effect among Labour's rank-and-file members of Parliament. The government paper detailing the proposal is imminent but every word will need the prime minister's approval.


Mr Blair never hides his disdain for the unions. He is impatient and patronising with their efforts to modernise. He does not share their collectivist values or their wish to exercise influence over public policy.

Other issues may soon strain the government-TUC relationship further. Union leaders are privately reconciled to a national minimum wage below the £4 (£6.70) an hour they would like to see, but they are concerned with the probability that any measures will exclude the under-25s. Union concern is also palpable on how the government intends to incorporate European Union social regulations on working hours, consultation rights and part-time employment into UK law.

But the government's attitude to public spending is even more important. Union economists angrily point to the Treasury commitment to reduce the proportion of gross domestic product spent by the state to 36 per cent by 2002-2003, taking the UK closer to the US and Japan and far below the levels spent by most EU countries.

The TUC is not in a militant mood. For the most part, its leaders have kept their silence and not sought confrontation with the government. Mr Monks has wanted to create a new understanding with a Labour government, accepting Mr Blair's view that unions must expect "fairness but not favours". It is this new relationship that is now at risk.

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ARAB BANK GROUP

Balance Sheet as of 31 December 1997 and 1996

Assets	1997 US\$('000)	1996 US\$('000)
Cash and due from banks	3 664 933	4 272 371
Funds with central banks	1 974 840	1 750 741
Government Securities	1 049 930	912 919
Trading Securities	181 990	165 970
Loans and advances, net	7 578 519	6 829 633
Long term investments, net	1 733 118	1 534 317
Fixed assets, net	141 621	98 699
Other assets	483 433	338 799
Total assets	16 808 384	15 903 449
Customers' liability on guarantees, letters of credit and other contingencies	5 694 439	4 883 187
Total	22 502 823	20 786 636

Liabilities and Shareholders' equity	1997 US\$('000)	1996 US\$('000)
Customer deposits	10 404 932	9 680 749
Bank deposits	3 204 194	3 303 474
Borrowed funds	14 036	24 060
Cash margin	712 322	598 104
Provisions	347 079	369 660
Proposed dividends and remunerations	32 552	32 237
Other liabilities	522 325	492 706
Total Liabilities	15 237 440	14 500 990
Shareholders' equity		
Capital	84 897	84 897
Statutory reserve	79 532	78 766
Voluntary reserve	258 325	218 836
General reserve	853 487	738 626
Reserves with associated companies	343 234	311 867
Retained earnings	2 220	483
Total	1 621 695	1 433 475
Translation adjustments	(50 751)	(31 016)
Total shareholders' equity	1 570 944	1 402 459
Total liabilities and shareholders' equity	16 808 384	15 903 449
Guarantees, letters of credit and other contingencies	5 694 439	4 883 187
Total	22 502 823	20 786 636

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TECHNOLOGY

SOFTWARE AIRPORT CONGESTION

Keeping the runways cleared for more take-offs

Flight delays are often caused by busy runways. Geoff Naim looks at a system that speeds up aircraft movements on the ground

As Air France flight AF7488 taxis to a halt at Paris Orly airport, passengers hear the familiar apology of "traffic congestion" to explain the 17-minute delay on what should have been a 75-minute flight.

Delays are common in Europe's crowded skies but many late flights are due to congestion on the ground. Orly hopes to eliminate these delays with the help of a new surface movement guidance control system (SMGCS) which is being tested.

The system uses object-oriented technology (OOT) - which builds a software application from pre-assembled blocks known as objects - to speed aircraft movements on the tarmac and optimise the use of runways.

"Europe's air traffic control problems are now largely in hand," says Xavier Fron, scientific manager with Eurocontrol, the body that co-ordinates ATC across Europe. "What must now be brought under control is con-

gestion at the airports. Every body recognises that this is the toughest problem."

Passenger numbers at the two Parisian airports, Charles de Gaulle and Orly, have grown from 38m to 60m in 10 years and 30 per cent of flights from French airports are delayed more than 15 minutes. Air traffic is growing at 6 per cent a year and the traditional ways of expanding airport capacity - new runways or terminals - face environmental opposition. Orly hopes that advanced SMGCS technology can delay the need for new infrastructure, and allow it to operate its existing runways at greater throughput for longer periods.

The technology has developed within a pan-European project called Mantea which involves a consortium of electronics companies and airport authorities and is partly funded by the European Commission. Orly is leading the trials, but aspects of the Mantea system are also being tested at Madrid Barajas and Rome Fiumi-

cino airports. The system may be used in 2000 for operational traffic handling and longer-term capacity planning.

One of Mantea's aims is to optimise the aircraft departure sequence, as this has a big effect on throughput. Traditionally, the departure order is jugged mainly using strips of paper bearing the aircraft call signs. There are many factors to be considered - small aircraft, for example, cannot take off directly after a 747 because of the turbulence - and the sheer weight of traffic at peak times can overwhelm the ground controllers, responsible for managing movements on the apron.

Another reason for turning to computers to control surface traffic is to improve safety. "You do not often hear about them but there are many 'near misses' when aircraft cross runways, for example," says Stéphane Paul, research manager with Alcatel, the French electronics company which is one of the participants in Mantea.

At present control procedures are based on visual observation and surface radar and aim to keep a safe separation between

aircraft and vehicles on the tarmac. However, these procedures are strained in bad weather or at peak times when 30 aircraft can be moving simultaneously. "The ground controller's job has become very difficult and when there is fog or very low cloud, the controller in the tower may not even be able to see the ground," says Mr Paul.

The Mantea project aims to address these problems by providing controllers with decision support tools to improve traffic planning and monitoring. These tools are most needed in bad weather as Eurocontrol's master plan for air traffic control into the next decade assumes that airports will be able to sustain near-normal arrival and departure rates during poor visibility - today they cannot.

The Mantea project aims to automate three functions: surveillance, planning and routing, monitoring and control.

The surveillance function is perhaps the most difficult challenge as the system has to attempt to identify vehicles and aircraft moving on the apron from the blips on the surface radar screen.

Ground controllers today cannot easily identify these blips as the radio transponders that identify airborne aircraft with their call signs must be turned off on the ground to prevent interference. The Mantea consortium has thus developed mathematical formulas that attempt to identify the blips on the screen automatically by reference to flight and vehicle movement plans.

The planning and routing function in Mantea uses the flight plans filed by airlines to derive movement plans for the aircraft on the ground. That helps controllers to guide taxiing aircraft and to prepare a departure sequence that optimises the use of the runways.

The third Mantea function, monitoring and control, detects any potential conflicts involving aircraft on the tarmac and helps controllers resolve them. That system automatically reschedules aircraft movements when it detects deviations from the filed plans.

Mantea uses object-oriented technology (OOT) and, in particu-



Exchange of roles: computers police aircraft safety best

lar, the popular Orbix "middleware" product from Iona Technologies, an Irish software company. By adopting OOT, each blip on the screen, once identified, becomes an "object" - an aircraft or vehicle - with associated properties that determine how it interacts with other objects.

According to Mr Paul, the use of object techniques speeds the development of a complex system such as Mantea, which comprises several subsystems each built by a different contractor. The function of the Orbix middleware is to "integrate" these diverse applications into one manageable solution. "Orbix makes the distribution of processes transparent so the contractor developing one tool does not have to worry about interactions with other tools," says Mr Paul.

Eurocontrol recently announced that it would also use Orbix to develop a new air traffic management application called Oasis. This will bind together existing programs for flight planning, airspace monitoring and weather applications, each written in a particular language and running on a different computer.

Object technology was once of mainly academic interest and Mr Paul admits there were some reservations about using the technology on a critical real-time system. "We had a bit of difficulty convincing some of the partners as it was new technology when we started two years ago."

However, OOT seems to have finally moved out of the laboratory and Iona says Orbix is used by more than 3,500 businesses.

REVENUE CONTROL

Data sifted on no shows and go shows

As competition has increased in the airline industry, so has the number of tariffs, writes Geoff Naim. Airlines have turned to sophisticated computer programs to juggle fare classes to maximise route revenue.

In 1983, Finnair, the Finnish carrier, offered only three booking classes but deregulation of European skies has increased competition dramatically. Finnair has responded with up to 30 fares and 15 booking classes on its most contested routes.

"Our goal is to optimise the revenues from each flight, but with 120 seats a year and 15 classes it is impossible for a human being to do it," says Tom Kallstrom, head of commercial automation.

Last year the airline decided to spend \$400m (£1.1m) upgrading an existing computer system to support its "revenue controllers" in forecasting demand on each route.

The Airline Revenue Enhancement software, supplied by US vendor Unisys, runs on a dedicated Unix computer at the airline's head office.

It is one of several revenue optimisation systems on the market, some built in-house by airlines, others by specialist vendors, such as the Pro program from US company Pro Strategic Solutions.

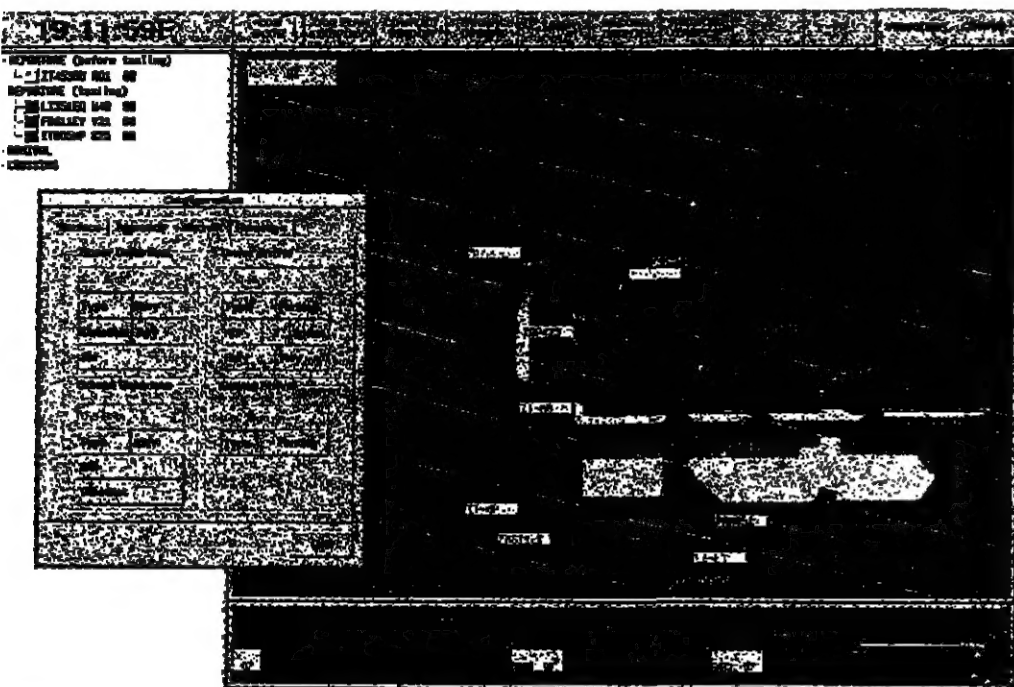
These systems take demand patterns, advance booking information, post-departure data, and fares as their input.

The data are fed into a sophisticated mathematical model and used to forecast demand by flight, segment, and booking class.

The aim is to improve decisions about the optimum number of seats for each booking class, desirability of upgrades, and the optimal number of overbookings to minimise risks of not getting a seat.

The systems must be able to track "no shows" and "go shows" - full-fare passengers who do not use their reservation, or who report for a flight with no booking.

The vendors claim their systems may improve an airline's turnover by 4 to 7 per cent. Mr Kallstrom says: "If we get a 1 per cent improvement I will be happy."



Runway success: a screen view of Mantea at Orly airport

BUSINESS JARGON COMPETITION 1998

Remember "shoddiput" and "white-erit"? Recall "referential transparency" and the strategic use of the "horsethroat"? These prize specimens of management gobbledegook were among the winners of the jargon competition we ran last year.

The Financial Times and the Management Consultancies Association are launching the 1998 business jargon competition. Three £500 prizes will be on offer, so start collecting gobbledegook horrors and watch these pages for further details.

Notice of Annual General Meeting 24 April 1998

The Board of Directors of Tele Danmark A/S hereby invites Tele Danmark's shareholders to attend the Annual General Meeting, which will be held at the offices of Tele Danmark A/S in Slet (Aarhus), Sletvej 30, 8310 Tranbjerg J, Denmark, on Friday, 24 April 1998 at 2.00 p.m. The agenda is as follows:

1. Election of the Chairman of the meeting.
2. The Board of Directors' report on the activities of the Company during the preceding year.
3. Presentation of the financial statements, including the auditor's report, together with a resolution for their adoption.
4. Resolution to discharge the Management and the Board of Directors from their obligations in respect of the financial statements.
5. Resolution regarding appropriation of profit or covering of any loss, as the case may be, according to the adopted financial statements.
6. Election of Directors, including the Chairman and the Vice-Chairman.
7. Election of two Auditors.
8. The Board proposes that the Annual General Meeting authorize the Board of

Directors - until the next Annual General Meeting - to acquire own shares at a nominal value of up to 10% of the nominal share capital of the Company in accordance with section 48 of the Danish Companies Act. The purchase price of the shares in question shall not deviate by more than 10% from the price quoted for the shares (until 1 June 1998: 8 shares) on the Copenhagen Stock Exchange at the time of the acquisition.

9. AOB.

The Agenda for the Annual General Meeting, the Company's annual financial statements and the consolidated financial statements with auditors' report as well as Annual Report 1997 will be available for inspection by the shareholders at the offices of the Company stated below from Wednesday, 8 April 1998.

Any shareholder is entitled to attend the AGM provided that such shareholder has obtained an admission card. Admission cards can be obtained by writing or calling Den Danske Bank on tel. +45 33 44 51 40, from

Wednesday, 1 April 1998 through Tuesday, 21 April 1998. The reference number used by the Danish Securities Centre (Værdipapircentralen) must be stated in connection with such telephone calls.

Admission cards may furthermore be obtained on presentation of due proof of identity during the said period at the Company's headquarters at Kanniksgade 16, 8000 Aarhus C, Denmark, or at the Company's office at Nørregade 21, 0900 Copenhagen C, Denmark, from 9:30 a.m. to 4:30 p.m. Insofar as non-registered shares are concerned, a securities statement issued by the Danish Securities Centre (Værdipapircentralen) or a depositary bank must be presented. Such statement may not have been issued more than five days before it is presented.

A Proxy and Annual Report 1997 will be forwarded by The Bank of New York to registered holders of Tele Danmark's American Depositary Receipts.

Tele Danmark A/S
Board of Directors

TELE DANMARK

INFORMATION TECHNOLOGY BRIEFS

Power of the pen for home shopping

The internet and technologies such as web television have renewed interest in home shopping, and opened up the possibility of revolutionising the way people shop.

But unless data such as product codes or a list of items to buy are already on screen and can be clicked on easily, home shoppers must enter the details manually - a serious barrier to widespread use.

Symbol Technologies International, a leader in hand-held scanners and barcode technology, believes it may have the answer.

The InfoPen is a barcode scanner incorporated into a standard sized ballpoint pen, designed by A.T. Cross, that



Consumer choice: the InfoPen makes home shopping easier

allows consumers to capture and manipulate barcode data printed on products or in catalogues. The data can be transferred to a home PC and transmitted over the internet to retailers.

"The key benefit of the InfoPen is that it makes the process of product selection as simple as drawing the tip of the pen over a piece of paper about the size of a postage stamp," says John Pellam, director of consumer systems for Symbol.

"One of the problems with home shopping so far has been that data had to be dictated over the telephone, input by keyboard or transmitted via some other time-consuming and labour intensive alternative. With the InfoPen, dozens of barcodes can be scanned in a matter of a few seconds and transmitted to retailers at the touch of a button."

Each pen has a unique identification code, an integrated decoder and a docking station or "InfoWell". Once data has been scanned using the pen they are transmitted optically to the docking station and then to the PC.

Symbol Technologies International: Tel +44 0118 9457298

Notebook's lighter touch

Carrying a standard A4 notebook computer around can still be a trial because most weigh at least 3kg and are

at least 1in thick. As a result, notebook PC manufacturers have been vying to produce the thinnest, lightest machine.

The latest contestant is Hewlett-Packard, which has just launched a machine called the HP OmniBook Sojourner aimed at corporate buyers.

The Sojourner weighs just 1.4kg, measures a mere 1.8cm thick and is scheduled for launch at the end of this month priced at about £3,595 (\$6,000).

"This is one of the market's truly unique and innovative notebook PCs designed for a demanding customer," claims Andrew Forsyth, HP's notebook PC marketing manager in the UK.

The machine, housed in a sleek metallic-blue magnesium case, is built around Intel's Pentium III 333MHz processor and features 64Mb of memory, a 2.1Gb hard disk and a 12.1in TFT (thin-film transistor) display. The Sojourner also comes with an attachable expansion "slice", which includes a 24x CD-ROM drive, floppy disk drive and a full set of input-output ports. An optional third slice adds an expansion battery providing up to six hours of operating time.

Hewlett-Packard: www.hp.com/omnibook

Virtual planning for plant design

Prosolvia Systems, a five-year-old industrial simulation company based in Gothenburg, Sweden, has unveiled a software program,

Digital Plant Technology, that brings together all the disciplines needed to plan, build, optimise and operate a complete manufacturing plant.

The software package, which runs under Windows NT, enables users to construct quickly a complete working 3D simulation of a plant, either at the planning stage or connected to and interacting fully with an existing plant. The user can evaluate, optimise and cost new ideas, so that when a real investment is made, the risks are minimised. In an existing plant the software can be used to schedule and optimise production, by out different scenarios and minimise downtime during production changeovers.

"In day-to-day operations, Digital Plant Technology enables a plant to be tuned, new ideas to be tried and machinery to be programmed within the simulation - all without disrupting ongoing production," says Morgan Harcus, president of Prosolvia Systems. "Excellent communication between the simulation and the shopfloor means rapid response to, and correction of, any line problems."

Digital Plant's 3D graphics are realistic and while most simulation products are designed to run on more expensive Unix machines, the new program runs on an ordinary PC.

Prosolvia: www.prosolvia.se

Paul Taylor

INNOVATION QUICKER COOKING

Up-to-the-minute cuisine

Andrew Baxter on a system that combines microwave and gas ovens

A UK manufacturer has unveiled what is claimed to be a world first: a cooker that combines the performance of gas with the speed and convenience of microwave energy.

Stoves, based on Merseyside in north-west England, says the Accelerated Cooking System can roughly halve the cooking time for most meals. A 10lb turkey that would conventionally

take 3hrs 40 minutes at 340°F would take 1hr 50mins, and would not need the normal 10-15 minutes of pre-heating.

The ACS oven is based around Rotastar, an innovation that Stoves introduced last year. The company had been trying to distribute heat uniformly from a gas oven in a way that is normally possible only with an electric fan oven. The challenge was to prevent the

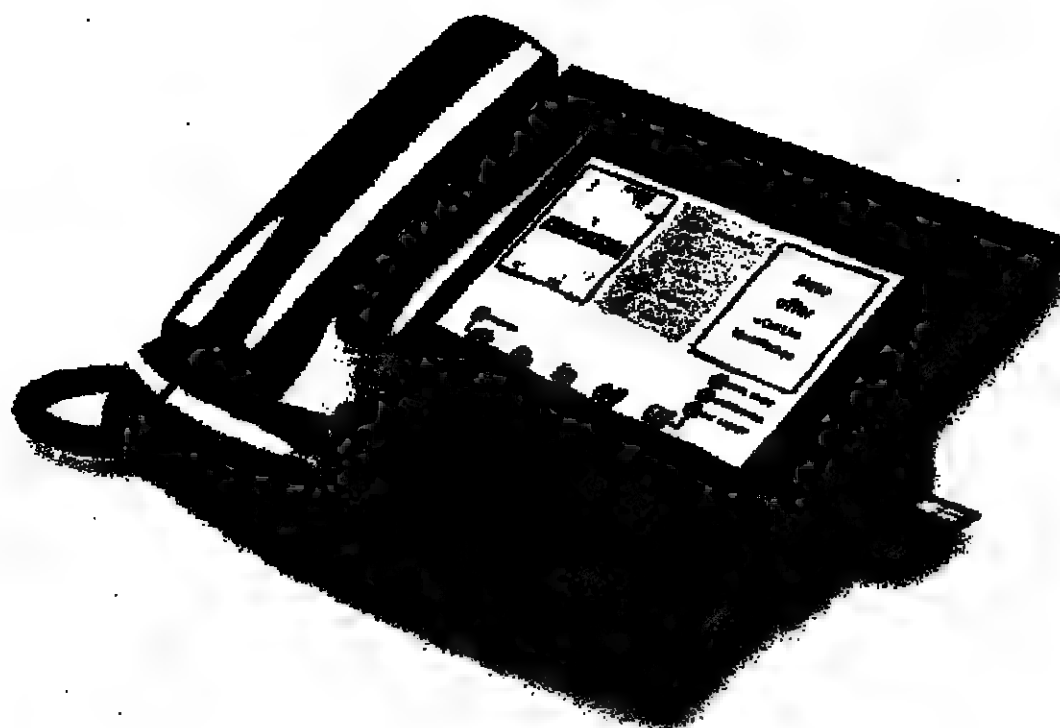
flow of air from the fan blowing the gas out.

Stoves designed a fan with a hollow shaft through which the gas could be delivered. This enables the gas burner head to rotate within the fan at 1,500rpm and deliver a combination of radiant and convected heat more efficiently and uniformly than other gas ovens. The system also retains the moist cooking environment for which gas is noted (burning hydrocarbons releases water, slowing the dehydra-

tion of food as it cooks).

The ACS system, says Stoves, is effectively a "turbo-charged" Rotastar, as the gas fan is combined with low-level microwave energy. If the microwave boost is switched on, a computerised control system works out which of four levels of microwave power to select.

Stoves has not yet announced product details for the system, but expects incorporating it are expected to be available later this year, costing about £2,500.



BEST COMMUNICATION PRODUCT AWARD AT CEBIT '98 ALCATEL INTERNET SCREENPHONE

« The awarded product in each of the four categories was selected from more than 1300 entries presented at CeBIT '98. It was our aim to award those of which we expect to have a major impact on the future of the computer and communications world. »

Mr Rainer Grabowski,



Editor in Chief of CHIP Magazine.

« I am very proud of this award which recognizes Alcatel's vision of end-to-end Internet solutions; from the most powerful Internet-ready switches in the world, to leading edge ADSL access systems, to Internet terminals for everyone at anytime. »

Mr Serge TCHURUK,

The **Alcatel Internet screenphone** will provide easy-to-use and affordable access to Internet services, as easily as using a phone. This compact product integrates a colour VGA touch-screen, a retractable keyboard, a smartcard reader and ingredients required for plug-and-play access to Internet. It is based on **pJava™**, the latest thin-client software suite from **SunMicrosystems™**, thus meeting all Internet standards.

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MANAGEMENT & TECHNOLOGY

MANAGEMENT INSIDE SHELL

Oiling the group's wheels of change

Transformation may stop short of revising the basic structure, says **Robert Corzine**

Resistance is "in" at the Royal Dutch/Shell group. "We can't succeed in the transformation without it," says one senior executive.

Perhaps, but it will be the growth in profitability rather than the spread of humility by which the present transformation will be judged.

The programme is intended to lift the traditional bureaucratic and organisational barriers that threaten to stifle innovation within the world's second-biggest company. It aims to instil a renewed sense of freedom within Shell, while at the same time preserving the cultural and behavioural "glue" that has made the company one of the world's most successful since the informal merger of Royal Dutch Petroleum and Shell Transport and Trading 90 years ago.

An important aspect of the transformation is to create businesses that reflect demands of their markets and customers, rather than businesses in line with an outdated corporate structure.

Chemicals is a case in point. In recent years the division, which was traditionally run along national lines, has performed poorly

against its main competitors, such as Exxon. Executives admit that it will be another two years or so before it is at the top rung of international competitiveness.

But the crisis of performance that triggered severe cost-cutting in the chemicals business has had a silver lining, according to Evert Henke, head of worldwide chemicals: "You cannot go through a severe cost-cutting exercise and not change people's behaviour."

Part of that behavioural change is to think globally, since that is how heavily commoditised chemical markets are organised.

Chemicals is the only Shell business run on such lines, and the problems and opportunities it produces offer an insight into the dilemmas posed by the transformation.

The relationship between chemicals and rest of the Shell group is changing. "The decisions we make on investment are designed to maximise our global profit and loss statement," says Mr Henke, and not to boost the prospects of national Shell operating companies.

What happens if a national Shell chairman suggests Mr Henke invest in his country in order to boost the com-

pany's other businesses? "His political clout doesn't figure in my thinking."

But if chemicals is growing apart from other Shell businesses, might it not make sense to spin it off from the rest of the group? "That question has been asked at every level of the business," he says. "If the numbers were convincing, perhaps that would be the way to go, but they aren't."

Critics of the company, however, question the sincerity of such statements. They doubt whether the company's top managers would seriously consider such a radical step as breaking off an established part of the business, even if one of the avowed goals of the transformation is to encourage the "atomisation" of the group, albeit in the context of a "loose federation".

"Why should what happens in a remote part of a Nigerian oilfield affect a totally different business in, say, Germany?" asks one former executive, who questions the rigour with which Shell assesses its long-term structure.

There is clearly reluctance by top managers to question basic tenets of how Shell is structured and run.

"I have the greatest admiration for the 90-year-old structure," says Cor Herkströter, outgoing chair-



Mark Moody-Stuart rejects idea that collective leadership needs modernising

Malcolm Watson

man of the committee of managing directors. "No one can say that because we didn't formally merge that there is a difference between Royal Dutch and Shell T&T."

Mark Moody-Stuart, his designated successor at the committee, rejects suggestions that Shell's collective leadership needs modernising.

"We have no wish to be exactly the same as everyone else," he says. "I'm not convinced that Shell is best run by a US-style CEO with God-like powers. In many other organisations people won't do something because

they are scared the leader won't like it. The CMD has a clear leader but it is a team."

But if some ideas are taboo in terms of the transformation, others are ambitious. "Take the company's commitment to diversity. Shell says it wants to increase the number of women among senior executive ranks from 4 per cent to 20 per cent in the next few years, and increase ethnic diversity at the top."

Managers believe diversity is the way to unlock the creativity and competitiveness

COMMUNICATING THE MESSAGE

Shell gets its own TV shows

Resistance to change is the biggest threat to Shell's corporate transformation programme, writes **Robert Corzine**.

Although top managers say the message that Shell must undergo a profound cultural and behavioural change is filtering to the lower levels, it is also clear that there is still substantial resistance to change.

"I can see the terror in the eyes of the local management team," says Phil Watts, head of global exploration and production. "People hate giving up predictability, order and stability."

Concern among top managers that the message may not get through prompted Shell to put together in five weeks one of the world's biggest corporate satellite television networks.

The aim was to get the message across to lower-level staff that it was okay to do things differently, in spite of what some mid-level managers might say. "They have all seen management fads come and go," says Mr Watts. "But if they see the head of E&P saying it's okay, then they know this is for real."

Management by talk show is only part of the solution. After all, for years Shell preached the mantra that mid-level managers have all the answers. Can top executives believe that lower-level

employees will feel emboldened by TV shows? Should they not seek out centres of resistance to transformation and crush them?

Senior executives win at such words: "We spent a lot of time convincing people rather than eliminating large swathes of staff," says Mark Moody-Stuart, chairman of Shell Transport and Trading in London. "We want people to feel free to express opinions. Change can also destroy something very important. Transformation is about winning hearts and minds."

Resistance has been especially strong in western Europe, where national Shell companies argued that they would "lose their localness" if a regional oil products business was established.

Mr Moody-Stuart admits a "certain amount of mutual paranoia" in Europe, but shies away from describing it as sacking recalcitrant managers. "If someone is plainly dishonest or malicious, no one has a problem firing them. If a human being has different views then it's a parting company."

John Hofmeister, overseeing the transformation, says outsiders should not judge too harshly: "When Jack Welch was transforming General Electric in the US, important steps were taken in the first two or three years but the outside world didn't see much change. Shell is at that point now."



Britton with his recyclable plastic containers

Tony Andrews

TECHNOLOGY PLASTIC CONTAINERS

A can-do solution to an old problem

Andrew Baxter on a stackable, recyclable can

For decades, ordinary lever-lid metal cans have been used to hold everything from treacle to paint. Now the traditional can faces a new challenge from plastic.

A UK-based plastics innovator has found a way to make a stackable, recyclable container from PET (polyethylene terephthalate) in one operation, including an extremely rigid box-section rim with a large "undercut".

This is something the plastics industry has been trying to achieve for years. At present, plastic cans must be made in a complex, two-part process - the body is blow-moulded and the rim is welded on top.

Inventor Jonathan Britton and two other UK plastics industry entrepreneurs, John Skerratt and John Hubbert, got together with solicitor Richard Graham last year to form the Plastic Can Company (www.canopet.com). They are officially launching the concept this week at Pake 98, a UK packaging exhibition.

The story began in 1994 when Mr Skerratt asked Mr Britton if he could find an economical way to make a PET version of small metal paint cans. "These cans have a heavy undercut, which meant that you could not blow-mould them or collapse a core," says Mr Britton.

After 18 months of trial and error, Mr Britton found a solution by adapting the standard way to make PET bottles and other shapes. This involves using injection moulding to make a pre-form, which is then heated, stretched, and blow-moulded under pressure.

Mr Britton decided to make a pre-form with a rim on it already, and then follow the same route, making the blow nozzle the same shape as the top of the can.

It worked on a small scale. Subsequently, Aoki, the Jap-

anese producer of stretch blow-moulding machines, made some 750ml cans - the size used, typically, for gloss paint - for the UK company and a 2½-litre version, as used for large cans of emulsion paint.

A one-piece plastic can with lever lid may have important implications for makers and users of cans, and material suppliers. Even if the can itself was no less expensive, making the tooling for the lid would be a fraction of the price of that for a screw-top jar, says Mr Britton.

The design may open the way to using all-PET cans for solvent-based paints. Other plastics are too similar to these paints chemically, but a one-piece PET can and lid may be 30 per cent cheaper for paint manufacturers than metal cans, Mr Britton estimates.

The design is creating interest throughout the packaging supply chain. It gives PET suppliers an opportunity to broaden their market, just now dominated by carbonated soft drink or water containers.

Mr Skerratt believes the logistics of can manufacturing may be transformed by the one-piece plastic can. Rather than buying many empty metal cans from a distant cannery, end-users could have plastic versions made on-site for an investment of about £1m (£1.67m), saving on transport, he says.

With the patenting process nearly complete, the Plastic Can Company plans to license the process and will not become a manufacturer, says Mr Graham. Meanwhile, two other developments are close to being fully patented, but further from being commercialised.

One is an innovative way to form internal threads and undercuts on stretch blow-moulded bottles and containers in PET and other plastics. The other is a way to make a pressurised plastic container that can be used with an aerosol without further strengthening the base.

PROFILE HANK GREENBERG, CHIEF EXECUTIVE OF AMERICAN INTERNATIONAL GROUP

Veteran with a global eye

The head of the US's largest general insurer tells **John Authers** about strategy

The second world war provided the first big opportunity in Japan for American International Group, the largest general insurer in the US. It broke into the market by selling life insurance to General MacArthur's occupying troops - and has been there ever since.

If Maurice "Hank" Greenberg, AIG's chief executive, has anything to do with it, the Asian financial crisis could yield similar results. "We haven't lost faith in Asia. Asia has an industrial population with a very high savings rate and, when all of this is over, I think some of the reforms that are being debated will make for a better region in the longer term."

Mr Greenberg, an energetic 73-year-old who succeeded the group's founder as chief executive in 1982, says AIG is more international than American. The group, which boosted profits to \$3.3bn last year despite the negative impact of Asian currency depreciations, was founded in Shanghai. It operated in several Pacific Rim countries before it opened its first US office.

That tradition continues. At the end of last year, in the light of south-east Asia's turmoil, AIG launched its second Asia infrastructure

fund, an equity vehicle that raised more than \$1.5bn. Mr Greenberg is also drumming up support for a recovery fund, aiming to invest at least \$1bn in equities, marketable securities and corporate bonds.

Other emerging market deals struck during the past six months hint at the breadth of his ambitions. They include a joint venture with Rakhat, a local industrial conglomerate, to offer insurance in Kazakhstan; to

'We aren't going to be in every form of financial services. I don't think anyone can have the scale to do all parts of the business effectively'

another with US Healthcare to sell health insurance in Singapore; the acquisitions of consumer credit companies in Thailand and Brazil; and the purchase of a licence to sell motor insurance in Japan.

Mr Greenberg has also been fully engaged domestically, although this month he walked away from a \$2.3bn deal to buy American Bankers Insurance of Miami, losing out to Centand, a direct marketing company. The fight was the most ac-

rimonious the US insurance industry had seen in years, and analysts were impressed when AIG opted to withdraw, pocketing more than \$100m in compensation.

Mr Greenberg seems somewhat detached from his peers in US insurance, who have become preoccupied by talk of consolidation. He feels above the fray.

"There is more supply than demand and so prices suffer. That's been a driving force for some consolidation within the industry for those who have felt they didn't have a great future on their

own," he says. "That's not the case for AIG. It's a global underwriter... We are in financial services, in many types of business."

He admits that running a global collection of diverse businesses has to be handled carefully. "We have strong regional management. They have oversight to some degree from central management. It's more informal than most companies, I think. On the other hand, there's a check-and-balance system."

As a chief executive bent on international expansion, it is not surprising he takes an overtly political role in trade issues. He is formidable well connected and has taken a more strident role in opposing protectionist elements in Congress than almost any other US business figure.

He has qualified praise for the International Monetary Fund's role in containing Asia's crisis. "The IMF started out saying they had



Still calling the shots: American International's Hank Greenberg

one treatment for all illnesses, but they have been moderating their pitch as they got into the countries and saw that some greater stimulation is needed in some sectors of the economy. They aren't ideologues about having a budget surplus everywhere. Everyone has learnt a great deal in the last couple of months."

He does not hide his contempt for those in Congress who want to cut the US contribution to the IMF. "I think the IMF is the only game in

town. There's no other institution. You don't try to create a new host in the middle of the ocean. You stick with the one you are in," he says. "I think the US Congress has got to make a contribution to the IMF. To me it's bewildering that we have multilateral organisations that we belong to but we don't pay our way. If you belong to the club you had better pay your dues. It's not just in the interests of business. It's in the national interest of the US."



JOHN KAY

Economic forces and the hairdresser

Why are some sectors dominated by a few companies, while others are highly fragmented?

Wherever you go, the oil market, the banking sector, and the car industry are dominated by a few companies. But estate agency, agriculture and plumbing are not. In most countries, retail banking is organised into chains that operate on a national basis (except in the US, where legislation was introduced to stop it). That is also true, but less so, of food retailing. And much less true if you are selling clothes.

All this is evidence that industrial structure is the product of economic forces that are general in their geographic application yet specific in their application to particular sectors. It is not generally a matter of historical accident or inevitable trends that are uniform in their incidence across the economy.

Yet only recently have there been systematic attempts to identify or

explain these forces. Market size is one important factor. Many services have to be delivered locally, so the effective market is really much smaller and more concentrated than shares of total output would suggest. No company has a very large share of retail newspaper sales, but that is not the point. Most customers have a wider effective choice of newspapers than of newsagents, even though there are few detergent manufacturers and many news stands.

Thirty car manufacturers, or 10 brands of oil, or six hairdressers, provide all the choice anyone would need. But it is cheap to ship cars and oil, but not haircuts, around the world. So 30 car manufacturers can provide not only all the choice anyone could need, but all the choice everyone could need. This is not true of hairdressers, so there need

to be many more hairdressers than car manufacturers.

So deciding whether an industry structure is concentrated or not depends on how you define the market. Perrier has a large share of the bottled water market, but a small share if you include tap water. And is the world pharmaceutical industry highly concentrated or not? On one measure, no: even the largest companies, such as Merck and Glaxo Wellcome, have less than 10 per cent of total sales. But if you look at most particular therapeutic categories you will find them dominated by two or three products.

These are the issues anti-trust agencies wrestle with. And the same issues confront the business analyst who has to decide whether an industry is particularly fragmented or particularly concentrated. But it is not only the

balance between scale economies and market size that matters. Banking is dominated by large organisations. I could set up a bank in my shed with only a computer, a phone and a licence from the Financial Services Authority. With no need of an expensive lunch room, well-paid executives or a branch network, it is not obvious that my costs would be higher than Citicorp's. The problem is, credibility matters a lot in a bank, and credibility tends to go with size.

That is one example of a market that has a winner-takes-all property. Customers want the most secure bank, the most effective drug, the most widely accepted credit card and the computer operating system that has the largest range of software associated with it.

These winner-take-all markets tend to become concentrated. That is why therapeutic categories (but not the pharmaceutical industry as a whole) show

high concentration. And there are other winner-takes-all, or winner-takes-most, structures. In some industries the largest research and development budget scoops the pool (perhaps less common than you might think, but an important factor in International Business Machines' former dominance). In other industries the largest advertising spend scoops the pool. That is why most fast-moving consumer goods markets are relatively concentrated.

The strength of competition is also relevant. More intense competition tends to mean fewer organisations. Weak competition protects weak companies; deregulation or decolonisation removes that protection. American airline deregulation illustrated that well. The immediate outcome was a wave of entries, but in the end there were fewer companies than before. That will in Europe

too: the trends are already evident.

And yet there are many industries to which none of these factors apply. Our picture of an industrial economy is often distorted by the nature of the quoted sector. If you put your faith in the FTSE 100 index, your view of the economy is skewed towards banks, pharmaceuticals, and oil companies. If you want to invest in plumbing or farming, you cannot do it through the stock market, and your choice of estate agents is limited to a handful of small firms.

There are generalisations to be made but no general conclusions applicable to all industries. And do not believe those who tell you that concentration or globalisation is inevitable. Think of your hairdresser.

The author is the Peter Moores Director of the Saïd Business School at Oxford University and a director of London Economics. This column appears fortnightly.

THE ARTS

ART FAIRS NEW YORK SALEROOMS

Barbaric and decorative

Susan Moore explores rare Asian animal imagery

Asia Week in the New York salerooms and, more particularly, the phenomenal success of the International Asian Art Fair at the Park Avenue Armory (today is the last day), has proved a catalyst for a host of shows in the commercial galleries. Last year, London dealers Eskenazi Ltd stole the limelight with a spectacular offering of Han and Tang ceramic sculpture. This year sees the home dealers rally.

At the Ariadne Galleries is a rare, glorious and "barbaric" display: "Treasures of the Eurasian Steppes - Animal Art from 800BC to AD200" (970 Madison Avenue, until April 30). Spotted within this dark, temporarily tented space gleam almost 200 small objects made mostly of bronze, silver or gold. Such portable luxury goods, usually ornament for man, horse, chariot or weapon, are all that survive of the shadowy nomadic tribes of Dark Age Eurasia.

This collection, and its handsome catalogue, explore the contribution made by these extensively travelled ancient peoples to the artistic traditions of local settled communities. While these settlements produced the luxury goods for nomadic consumption, the tribesmen themselves - as herders and hunters, traders and raiders - account for the cross-pollination of this vast area's regional styles. Common to them all, however, was the use of animal imagery.

Animal or zoomorphic elements range from the naturalistic to the stylised, the real and the fantastical, often embracing the two. Take, for instance, the lively, realistically modelled low-relief figure of a once glided bronze bull, head tilted, tail-awishing, made in eastern central Asia/north-west China 4th-2nd century BC and used as a belt plaque. In contrast, objects like the two openwork gold plaques made in southern Siberia 4th-3rd century BC, where four bird's heads are arranged geometrically at each corner,

are stylised to the point of almost unrecognisable abstraction.

A pair of gilt bronze belt plaques made in north China 3rd-1st century BC, finds naturalistic wolves and bears modelled in fairly high relief battling with some strange, striated mythical creature with raptor heads.

Only survivors of the shadowy nomadic tribes of Dark Age Eurasia

Identical examples have been excavated as far afield as a Han dynasty antiquarian's tomb in Shaanxi province to a Hun burial in Kazakhstan in the southern Ural.

Other animal forms are stylised to suit the function of the piece. Like a bronze harness ring from 10th-7th century BC Iran bearing exaggerated curling, thick horns. Elsewhere, it is hard not to admire pieces - like the pair gilt rectangular plaque ornamented with

four stages - as mastery exercises in purely decorative stylisation.

Possibly the first collector of this art was Peter the Great, who amassed hoards said to have come from Siberia in his *Kunstkammer*, and now in the Hermitage. The museum will benefit from the sale of the catalogues of this collection which, gathered over 15 years, is being offered en bloc - the asking price, \$6m.

"Animals and Animal Designs in Chinese Art" is the theme of this year's Eskenazi show (98 East 78th Street, until Saturday). While the material of the two shows overlaps with the likes of the two gilt bronze plaques from the Ordos region north of China, this exhibition embraces a wide range of materials and periods.

There are Han earthenware pottery and gilt bronze figures, for instance, Tang silver vessels, Song stone-ware, Ming porcelain and carved jade, as well as not to admire pieces - like the pair gilt rectangular plaque ornamented with

in strictly symmetrical patterns centred on the eyes. Naturalism is again married with fantasy in the Eastern Zhou period bronze tiger-leopard, whose well-modelled muscular body has been split in two from a single head to provide a corner piece to support a vessel or tray, the whole then wildly inlaid in scrolls of silver.

For the most part, however, the appeal of the show for a contemporary audience derives from the various craftsmen's close observation of nature. Perhaps nowhere is this more appealing than in the Han Dynasty bronze incense burner in the form of a walking tortoise, inlaid with silver and gold. The plodding, purposeful motion of the animal, an emblem of longevity, has been captured precisely, as has his inquisitive beady eyes, wrinkled and scaly skin and silver tufted beard. No comparable example is known.

J.J. Lilly & Co (41 East 57th Street) meanwhile, devotes an entire show to the arts of the Han Dynasty, most notably to the large,

distinctive pottery figures from remote Sichuan province. The antithesis of those serene and silent elegant figures made for the Tang court, these pieces, fired from coarse red clay, are characterised by an earthy, robust vigour. Here is humanity, warts and all.

In the case of the comic figure of the storyteller, this humanity is nothing short of grotesque. This hunched, pot-bellied charmer, complete with biobly nose and collapsed, grinning mouth, is having difficulty keeping his trousers up as he acts out his humorous tale,

drum in one hand, the other keeping hold of his disappearing waistband.

The almost metre-high prancing horse, his strong head and neck vigorously modelled, lays claim to being the finest known model of the Han emperors' new breed of "celestial horses" imported into China from central Asia to keep the mounted warriors of the nomadic Xiongnu at bay.

Until April 11. More ancient Chinese art, this time from the Warring States and Tang periods, is shown by Paris-based dealer Christian Deydier at the Jan

Krugier Gallery, alongside work on paper by Zao Wou-ki (again at the Fuller Building at 41 East 57th Street, until April 11). At M.D. Flacks Ltd (38 East 57th Street, until tomorrow), Classical Chinese furniture is complemented by a stunning array of 40 silk embroideries, brocades and tapestries dating AD 900-1600, courtesy of London's The Textile Gallery.

These vivid survivals take us back to the Silk Route, and are further witness to the movement of craftsmen, materials, techniques and imagery along it.



Bovine belt plaques bronze with traces of gilding, depicting a bull in profile

Contrived and richly disappointing

THEATRE

ALASTAIR MACAULAY

Give Me Your Answer, Do!
Hampstead Theatre, London

Brian Friel's latest play *Give Me Your Answer, Do!* - new last year in Dublin, now receiving its British premiere - is a thick tapestry of several themes, so well textured that it moves easily between pain and humour in a sentence, and so well plotted that we keep reinterpreting the past, present and future of the characters onstage. *Mother*: "Oh yes. You were more than promising once. Threw it all up for something bigger, didn't you?" (Apparently changing subject, and looking at the glass in her daughter's hand.) "What's that?"

Daughter: "Gin." The play is about blighted promise and frustrated hopes, about the ironies between life and art, about the social humiliations wrought by family among friends, and about the ways in which husband/wife/child patterns do and don't repeat from one generation to the next.

This sounds a lot, and eventually Friel seems to bite off more than he chews. What's more, at times the play becomes artificial, contrived, in some of the too-polished speeches and too-composed situations it sets before us. Still, even if you find the play disappointing, as I do, you can hardly miss the complex, humane, high standards it sets itself and nearly attains. Being disappointed by *Give Me Your Answer, Do!* is a richer experience than being satisfied by many other plays.

Daisy has had great musical promise, which she chose to leave under-fulfilled; instead, she married Tom, a novelist, and had a daughter, Bridget. At the time of the play, Tom has published nothing for years; Bridget has been in hospital for several years, locked into speechless mental disturbance; Daisy cannot pay their bills, and keeps herself calm with gin. Her parents come to visit. Jack, her father, is a charming old cocktail pianist but also an occasional, compulsive thief; her mother, Maggie, a pillar of rectitude, is a recently retired doctor who refuses to acknowledge that her arthritis may confine her to a wheelchair within months.

This would be a recipe for vicious Strindbergian despair - were it not for the solid affection and solicitude that is abundantly shown between members of the family, and beautifully based. Still, affection and solicitude are ambiguous. We keep seeing the painful truths which characters try not to acknowledge, and we keep being made to wonder about other matters. In particular: is Tom's devotion to his now hospitalised daughter an expression and/or denial of incestuous desire for her?

For much of the play, all this is overlaid by the visit of another couple, old friends of Tom's and Daisy's, the fellow-novelist Garret Fitzmaurice and his wife Gráinne. Tom and Daisy, although outgoing and warm, play a more advanced version of the game going on elsewhere here: wound or humiliate your spouse under the cover of social intercourse. Garret, a more pub-



Subtle impressions: Niall Buggy and Geraldine James in 'Give Me Your Answer, Do!'

lished, populist, and popular novelist than Tom, nonetheless is full of writerly insecurities, and Gráinne is especially good in jabbing at this Achilles' heel of his. When someone says "Novelists don't retire, do they?" she pounces: "They should, instead of stumbling on after they're dead. Creatively." And yet she - three-dimensional, like all the play's characters - regrets this sophisticated marital guerrilla warfare.

This London premiere, handsomely cast, is beautifully directed by Robin

Lefèvre. Admittedly, one climactic moment is staged too much like the frozen beginning of a Rostandian ensemble, with all the characters aghast; and there are one or two other touches of staginess. Yet even these moments are redeemed by Friel's writing: how stirring it is when Maggie, after lashing her husband with the maximum severity of her tongue before everyone, then says softly, "And to think that was the boy who once flooded my head with music".

No performance is more

exceptional than Niall Buggy's as Tom. He shambles through the play like a lost child or holy fool, folding up again and again in unexpressed misery. Once you see him crumple, then explode in fury, then crumple again, all in a few seconds, and without straining for effect: superb, and touching. Geraldine James's flawless Daisy is an enthralling mixture of strength, and calm and resignation; she seems to have gone beyond the pain that Tom suffers, and her tender, ironic endurance becomes the deep heart

of the play. Margaret Tysack and John Woodvine are her parents, Gawn Granger and Sorcha Cusack are the Fitzmaurices.

Despite the odd passage of theatrical contrivance, despite the excess of unresolved narrative threads (Aneurin Hughes plays, very well, an archivist whose function is obviously underdeveloped by Friel), *Give Me Your Answer, Do!* leaves a large and subtle impression. When it ends, you applaud as if some strange new sensation had entered your life and had then withdrawn.

Landscapes in concert

OPERA

DAVID MURRAY

Richard Hickox and the City of London Sinfonia

As Londoners settle into an enforced period of operas-in-concert while somebody sorts out the Royal Opera, such events are proliferating. Richard Hickox and his City of London Sinfonia gave their second of three performances in the Barbican concert hall, each offering an "opera" more or less connected to A Midsummer Night's Dream.

"Opera", *sic!* - because Mendelssohn's *Dream* only adds incidental music to the spoken play, performed together here a couple of weeks ago; and Weber's *Oberon*, which we heard last Thursday, is a farago, a pantomime with songs and scene-music, connected to Shakespeare only through naming three characters after Puck, Titania and its eponym.

Oberon is the only interesting example we have of its peculiar, early-19th century English genre. You may think that the National Theatre has an unhealthy taste for domineering, overweening sets, but at least those are generally inspired by the play, or anyhow the designer's reading of it. *Oberon*, written for the Covent Garden *dramma*, represents something stranger: "opera" in which the entire course of the action was motivated by the scenery, the new effects and transformations that the theatre could triumphantly offer.

The CLS concert-performance, therefore, excluded the *raison d'être* of the piece, stripped of its visual excursions into sensational landscapes from Charlemagne's France to Egypt and back.

But since that *raison* is ridiculous, and Weber's music full of delights, nobody could object; and furthermore Hickox fielded well-chosen singers (the original cast also included non-singing principals), and the welcome bonus of Timothy West to fill the musical gaps with John Warlock's literate narration.

It made a happy evening. Only Weber's overture is generally familiar, though his soprano heroine's grand "Ossian! Thou mighty monster" turns up from time to time in concert-programmes. The range and fresh variety of the rest of the score is captivating, from simple ballads to dramatic arias, ensembles and picturesque choruses. The London Symphony Chorus delivered the latter with polished strength.

The leading pair were North American: Christine Brewer lustily elegant as the heroine Reiza, Alan Woodrow urgent and forceful in her lover Huon's big, high-flying numbers, but in slower music tending to home in on true pitch from some audible distance away - a bit queasy, Pamela Helen Stephens's shapely, sexy mezzo was lovely to hear in the handmaiden Fatima's songs.

Lesser roles were expertly taken by Alan Ople, Jean Rigby and Susan Gritton. John Dazak sang a decent but uncharismatic Oberon. It was nice to hear this fragmented score (rather like the mock-exotic opera *Zeide* and *L'Or du Caire* that Mozart began and then abandoned), and nice also to think that no money had been wasted on staging the whole silly show.

Sponsored by HSBC Holdings plc, with support from the Royal Philharmonic Society.

INTERNATIONAL

Arts Guide

BALTIMORE

EXHIBITIONS

Walters Art Gallery
Tel: 1-410-547 9000
● Masters of Light: Dutch Painting from Utrecht in the Golden Age. Brings together 74 works produced by painters working in the city in the first half of the 17th century; ends on Sunday, then transfers to London
● Monet: Paintings of Giverny from the Musée Marmottin. 22 paintings produced during the last 23 years of the artist's life, when his energies were focused on painting the gardens of his estate. Photo murals and works from the collection will be shown alongside; to May 31

BERLIN

DANCE

Tanzstuden: unter dem Linden
Tel: 49-30-2035 4555
www.tanzstuden-berlin.org
Tanzstuden: ballet triple bill, to music by Henze, Le Dispersé, the Signor Pulcinella, with choreography and sets by Dieter Hellkamp; Le Fils de l'Air ou l'Enfant Chagré en Jeune Homme, in a staging by Henze with choreography by Marek Rózyczki; and

Labyrinth, by Mark Baldwin; Apr 2, 4

DUBLIN

Irish Museum of Modern Art
Tel: 353-1-612 9900
Brian Cronin: Fat Face With Fork. First exhibition in Ireland of work by the Dublin-born, New York-based illustrator; from today until Jun 1

GENEVA

CONCERT
Victoria Hall
Tel: 41-22-317 0017
Orchestre de la Suisse Romande: conducted by Heinz Wallberg in works by Hindemith, Schumann and Brahms; Apr 1

HELSINKI

OPERA
Finnish National Opera
Tel: 358-9-4330 2211
The Magic Flute: by Mozart. New production by Elinor Glasow, designed by Peter Tälberg. Conducted by Mikko Franck; Apr 1, 4

LAUSANNE

CONCERTS
Théâtre de Beaulieu
Tel: 41-21-643 2211
Orchestre de la Suisse Romande: conducted by Heinz Wallberg in works by Hindemith, Schumann and Brahms; Apr 2

LISBON

CONCERTS
100 Days Festival, Expo '98

London Symphony Orchestra:
Riccardo Chailly conducts concert performances of Mahler's *Totenlieder* and the closing part of Act 3 of Wagner's *Götterdämmerung*. With sopranos Jane Englen and Janice Watson; Coliseum; Apr 1

LONDON

CONCERTS
Queen Elizabeth Hall
Tel: 44-171-980 4242
English Chamber Orchestra: conducted by Raymond Leppard in works by Debussy, Shostakovich, Sibelius and Elzet. With piano soloist Alexander Melnikov and trumpet soloist Sergei Nakariakov; Apr 1

Royal Festival Hall
Tel: 44-171-980 4242
● Bamberg Symphony Orchestra: conducted by Ingo Metzmacher in works by Beethoven and Mahler. With violin soloist Viktoria Mullova; Apr 1
● Philharmonia Orchestra: conducted by Leonard Slatkin in works by Rimsky-Korsakov, Prokofiev and Rachmaninov. With piano soloist Nikolai Lugansky; Apr 2

● London Philharmonic Orchestra: conducted by Ingo Metzmacher in works by Debussy, Turgenev and Stravinsky. With saxophonist Martin Robertson; Apr 3
● BBC Symphony Orchestra: conducted by Jukka-Pekka Saraste in the UK premiere of Per Norgard's *Symphony No. 2*, and works by Arvo Part and Sibelius. With the Hilliard Ensemble, piano soloist Leon McCawley and the BBC Symphony Chorus; Apr 4

EXHIBITIONS
Hayward Gallery

Tel: 44-171-261 0127
www.hayward-gallery.org.uk
● Francis Bacon (1909-1992): The Human Body. Brings together important works dating from 1945 to the mid 1980s; to Apr 5
● Henri Cartier-Bresson: European. Exploring changes from the 1930s to the 1970s, through the eyes of the photographer; to Apr 5

OPERA
English National Opera, London Coliseum
Tel: 44-171-632 8300
● La Bohème: by Puccini. Steven Pinkoff's production is revived by Barry Atkinson and Frances Moore, and conducted by Alex Ingram; Apr 2, 4
● The Tales of Hoffman: by Offenbach. New production by Graham Vick, designed by Tobias Hübner and conducted by Paul Daniel/William Lacey. Cast includes John Tomlinson; Apr 3

LUCERNE

CONCERTS
Easter Festival
Tel: 41-41-226 4480
www.lucernefestival.ch
● Concentus Musicus Wien: conducted by Nikolaus Harnoncourt, with the Arnold Schoenberg Choir. In works by Haydn; Jesuitenkirche; Apr 1
● Orchestra of the Age of Enlightenment: conducted by Frans Brüggen in works by Bach. With soprano Lynne Dawson; Jesuitenkirche; Apr 2
● Munich Chamber Orchestra: conducted by Karl-Friedrich Böhmer, with the Windsbacher Knabenchor, in Bach's *Mass in B minor*;

Jesuitenkirche; Apr 3
● The English Concert: Trevor Pinnock conducts Bach's *St John Passion*, with soloists including tenor Ian Bostridge; Jesuitenkirche; Apr 4
● Thomas Zehetmair: recital by the violinist of works by Bach; Franziskanerkirche; Apr 4
● St. Matthew Passion: conducted by Alois Koch. With singers including the Lucerne Music College and Choral Academy; Jesuitenkirche; Apr 5

MADRID

EXHIBITION
Fundació "la Caixa"
Tel: 34-1-435 4833
Rembrandt: The Human and the Natural Landscape. Previously seen in Barcelona, this exhibition comprises 91 oil paintings from the Rembrandt House Museum in Amsterdam; ends on Sunday

MILAN

OPERA
Teatro alla Scala
Tel: 39-2-88781
www.lascala.milano.it
Linda di Chamounix: by Donizetti. Co-production with Vienna Staatsoper conducted by Roberto Abbado in a staging by August Everding; Apr 1, 3

MUNICH

CONCERTS
Philharmonie Gastspiel
Tel: 49-89-5431 8781
● Bavarian Radio Symphony Orchestra: conducted by Lorin Maazel in works by Ravel, Barber and Stravinsky; Apr 2, 3

● Rundfunkorchester des Bayerischen Rundfunks: conducted by García Navarro in extracts from operas by composers including Puccini and Wagner. With soprano Gabriele Schnaut; Apr 5

NEW YORK

OPERA
Metropolitan Opera, Lincoln Center
Tel: 1-212-362 8000
www.metopera.org
Lohengrin: by Wagner. New production by Robert Wilson, with costumes by Frida Parmagiant; Apr 2

New York City Opera, New York State Theater
Tel: 1-212-870 5570
www.nycoopera.com
Emmeline: premiered in Santa Fe in 1996. Tobias Picker's opera is presented here in the same production by Francesca Zambello, with sets by Robert Israel. Based on Judith Rossner's novel, J.D. McCloskey's libretto is a version of the Oedipus myth set in New England. The cast includes Patricia Racette and the conductor is George Manahan; Apr 4

PARIS

CONCERT
Salle Pleyel
Tel: 33-1-4561 6588
Orchestra de Paris: conducted by Yuri Ahronovitch in works by Weber, Bruch and Dvorák. With violin soloist Roland Daugareil; Apr 1, 2

SAN FRANCISCO
CONCERTS

Davies Symphony Hall
Tel: 1-415-884 9000
www.davieshall.org
San Francisco Symphony Orchestra: conducted by Stanislaw Skrowaczewski in Elgar's *Violin Concerto*, with soloist Pinchas Zukerman. Programme also includes works by Wagner and Shostakovich; Apr 1, 2, 3, 4

TOKYO

CONCERT
Bunkamura
Tel: 81-3-3477 9999
New Japan Philharmonic: conducted by Mstislav Rostropovich in works by Shostakovich, with violin soloist Maxim Vengerov; Orchard Hall; Apr 3

TV AND RADIO

● WORLD SERVICE
BBC World Service radio for Europe can be received in western Europe on medium wave 648 kHz (493m)

EUROPEAN CABLE AND SATELLITE BUSINESS TV

● CNN International
Monday to Friday, GMT:
06.30: Moneyline with Lou Dobbs
13.30: Business Asia
19.30: World Business Today
22.00: World Business Today Update

● Business/Market Reports:
05.07; 06.07; 07.07; 08.20; 09.20; 10.20; 11.20; 11.32; 12.20; 13.20; 14.20.

At 08.20 Tanya Beckett of FTTV reports live from LIFSE as the London market opens.

APR 1 1998



LIONEL BARBER
EUROPEAN VIEWPOINT

Dwarf gains stature

The European Union has been criticised for failing to forge a foreign policy. But enlargement eastwards represents just that

When Richard Holbrooke speaks, the European Union winces. More than most, this talented and abrasive American diplomat has discredited Europe's efforts to forge a common foreign and security policy.

Mr Holbrooke brokered the Dayton accords, which ended the war in Bosnia. He relegated the Europeans to bit players in their own backyard. Soon afterwards, he struck again, accusing the EU of "sleeping through the night" when Greece and Turkey almost came to blows over an uninhabited island in the Aegean.

This week, the Europeans declared: "Enough, already." To all those who subscribe to the Holbrooke thesis that the Union is doomed to remain an economic giant and a political dwarf, the 15 member states offered a resounding riposte.

The occasion was the opening of negotiations on membership for former communist countries of central and eastern Europe, plus Cyprus. Family photos are nothing new. But this time there was a sense of history-in-the-making during the televised debate among the foreign ministers of the 15 present and 11 future members of the EU.

We admired the combination of humility and pride that Bronislaw Geremek, the Solidarity veteran turned Polish foreign minister, displayed when he was invited to speak first. We witnessed the exhilaration on the faces of the foreign ministers of the Baltic states: each liberated from the Soviet Union, each confident enough to crack jokes on camera. With one or two exceptions, the western Europeans looked stodgy by comparison.

Enlargement will stretch well into the next century. There will be terrible rows over Bulgarian cherries, Czech apples and Polish potatoes. And remember: the EU has still to come to an agreement over the cost of enlargement and the reform of the Common Agricultural Policy. But no one should ignore the dynamic impact of enlargement on the Union, nor the fact that enlargement is the best advertisement for the EU's fledgling common foreign and security policy.

The perspective of membership is exerting a powerful and positive influence over political developments in the candidate countries, anchoring democracy after the fall of the Berlin wall. Slovakia is an exception, but Hungary is the model. By concluding treaties with neighbouring Romania and Slovakia on the treatment of ethnic minorities, the

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Maastricht criteria as "political cover" for unpopular measures needed to qualify for the single currency. The authorities have discovered it is easier to push through reform in the name of "Europe".

Finally, there is a remarkable consensus within the EU itself that some countries are on a faster track to membership than others. In spite of dire predictions, everyone has signed up to the division of the applicants into two camps: an advance guard comprising the Czech Republic, Hungary, Poland, Estonia and Slovenia, plus Cyprus; and a second group including Bulgaria, Romania, Latvia, Lithuania and Slovakia.

This consensus will be tested in future. Veteran diplomats in Brussels worry what will happen if the Latvians and Lithuanians fail to join their Baltic neighbour Estonia in the first wave of applicants in 1999 or 2000. Some wonder whether Mr Geremek speaks for the rest of his government when he says Poland understands it may not be in the first wave of new members early next century. (This is because its size and farming interest present more obstacles to membership than other smaller candidates.)

To an extent, there has been a conspiracy of silence about the foreign policy implications of enlargement. The inclusion of Estonia in the advanced group extends the EU's writ into the former Soviet Union, reaching beyond where Nato - so far - fears to tread. It puts a premium on the EU's relations with Belarus, Ukraine and Russia.

And no one knows the Russians better than their former satellites in central

Europe. Witness the observation of one foreign minister during the debate over President Boris Yeltsin's decision last week to sack his whole government, including Viktor Chernomyrdin, the prime minister. "It is very simple," said the minister. "They have sacked Genghis Khan (the state-owned gas giant once run by Mr Chernomyrdin) from the government."

Enlargement remains a balancing act. It depends on the EU preserving the notion that everyone has an equal chance of membership and that the Union is serious about opening the doors of the club without unnecessary delay. That means coming to a deal within the next year or so on the budgetary costs of expansion east.

The other big unknown is Cyprus. Which brings us back to Mr Holbrooke. As special envoy to the Cyprus conflict, he is involved in international efforts to broker a settlement between the Greek and Turkish Cypriot communities on the divided island.

This week, Turkey warned that the opening of accession talks with the Greek Cypriots had escalated tensions in the eastern Mediterranean. The Americans fear a conflict between Greece and Turkey, two Nato allies. Mr Holbrooke, like his colleagues in Washington, thinks the best way to defuse tensions is to offer Turkey a ticket to EU membership.

It looks attractive. But the EU will not go beyond its offer of long-term membership, which it made last December in Luxembourg. Turkey is too big, too poor and too Islamist to join the central and eastern Europeans - yet. The Turks must settle for a status between family and neighbour.

Forging a new relationship with Turkey is perhaps the greatest immediate challenge for Europe's common foreign and security policy. And if it is any consolation to Mr Holbrooke, it cannot be resolved without the Americans.

Lionel Barber at the.com

LETTERS TO THE EDITOR

Overheated riposte to view that markets undermine democracy

Mr Edward S. Herman

Sir, Max Wilkinson's review of John Gray's *False Dawn: The Delusions of Global Capitalism* ("A free market conspiracy theory", March 26-28) suffers exponentially from all the disorders attributed to Mr Gray, and Mr Wilkinson's use of phrases such as "sinister army of speculators", "conspiracy", and "overheated verbiage" points to overheated emotions on the part of the reviewer.

Criticising Mr Gray's claim of loss of government sovereignty, Mr Wilkinson says that the author "failed to notice" that governments "often have only themselves

to blame", and that "economic mismanagement, excessive borrowing, or debasing of the currency are the common causes of the collapse". But Mr Wilkinson fails to notice that the financial markets very often object to policies that will not serve the corporate bottom line, and in fact systematically punish policy moves that serve ordinary citizens. They have gone a long way towards making social democracy out of bounds, and the policy constraints they have imposed help explain the steady global increase in inequality of income and wealth. Their policy biases have also con-

tributed to the paralysis in dealing with global environmental issues.

As Stephan Schmidheiny of the World-Business Council on Sustainable Development notes in his book, *Financing Change* (MIT Press, 1992), "markets virtually always work against sustainability", and financial markets in particular, he argues, with their focus on short-term payback, are especially ecologically insensitive. Mr Schmidheiny is not a conspiracy theorist.

Edward S. Herman, 28 Fairview Road, Penn Valley, Pa 19072, US

Year 2000 addressed

From Ms Victoria Youngblood

Sir, Brian Robson (Letters, March 21-22) is a little unkind on the London Stock Exchange in relation to disclosure of the Year 2000 issue.

The exchange sent a circular letter to the finance directors of all listed companies on March 13 1998 referring to the abstract issued on March 5 1998 by the urgent issues taskforce of the Accounting Standards Board and entitled "Year 2000 issues: accounting and disclosures". The abstract applies to accounting periods ending on or after March 23 1998 and the exchange is encouraging all listed companies to make disclosures equivalent to those required by the abstract by December 31 1998, which may mean including such disclosures in interim statements.

The stock exchange also reminds companies of the need to consider whether, under the general disclosure obligations set out in chapter 8 of the listing rules, announcements are required in respect of potential problems or uncertainties associated with Year 2000 issues.

Victoria Youngblood, 24 Harker Street, London SW3 2LG, UK

UK utility regulation still has role to play

From Ms Ruth Evans

Sir, It is far too soon to suggest, as you do in your editorial "UK utilities" (March 26), that competition in gas and electricity reduces the need for regulation. The jury is still out on whether competition can benefit all consumers, especially the less well-off. Robust regulation to protect consumers and prevent anti-competitive behaviour remains essential.

Increased transparency in company finances and the creation of independent con-

sumer bodies are therefore very welcome measures. We see no problem with consumer bodies becoming critical of the regulators, so long as their opinions are well-researched. Many of the proposals in the green paper reflect policies we have advocated for several years, often in the face of opposition from both industry and regulators.

Given the essential nature of the services the utilities provide, healthy public debate on how they operate can only be a good thing.

For similar reasons, a public policy framework for regulation is crucial. If important social and environmental matters are not to be left to unelected regulators, it remains to be seen whether "statutory guidance" from ministers is the best means of achieving this, but at least the issue is now being addressed.

Ruth Evans, director, National Consumer Council, 24 Grosvenor Gardens, London SW1W 0DB, UK

Brussels and EMI ignoring German pensions timebomb

From Mr Bryan Cassidy

Sir, Reflecting on last week's European Commission and European Monetary Institute reports on which countries qualify for monetary union, your editorial, "The limits of thrift", and the excellent analysis by Peter Martin, "Europe boldly goes" (March 26-28), quite rightly stress the demographic timebomb ticking away in those countries such

as France and Germany with heavy burdens of unfunded "pay as you go" pensions. The European Commission conspicuously omitted to mention it. The EMI country analyses discreetly draw attention to it, however. Indeed, they single out for praise the countries which already have or are moving towards a high level of private pension provision - the UK, Finland, Ireland and the Netherlands.

But there are two other pension problems likely to aggravate the situation, especially in Germany. One is the excessively long period of 10 years before an employee's pension is vested - a great inhibitor to job mobility. The other is the practice of German companies using their employees' pension funds to bolster their balance sheets - a practice that gives an entirely false impression of

the soundness of many German companies, as well as being unfair to their workers.

Neither of these problems is referred to either in the European Commission document on monetary union or, surprisingly, in that of the EMI.

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Sterling on steroids

Richard Adams explains the pound's rise and considers which sectors of the UK economy can live with current rates

A year ago, the idea that sterling might be worth more than DM3 was regarded with horror by economists and industrialists alike. Now this has become a reality. That raises the following questions. Is the strong pound here to stay? If it is, can the economy live with sterling at that level? And what impact will Europe's economic and monetary union have?

The pound's appreciation started in August 1996, when it was trading at around DM2.30, the level around which it had stabilised after its ejection from the European Exchange Rate Mechanism in September 1992.

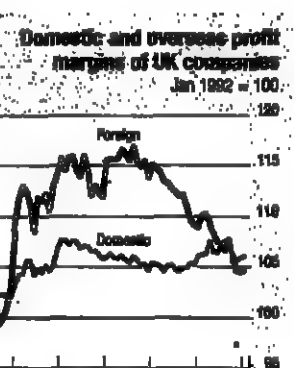
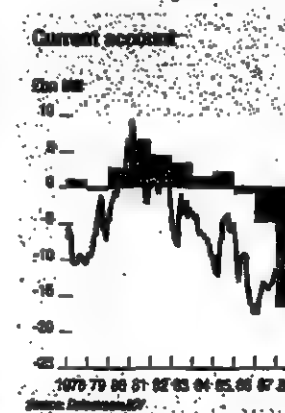
Since late 1995, its advance has been inexorable. On Monday, it reached DM3.05, its highest level since 1990. Against a basket of currencies of the UK's trading partners, sterling is at its highest for almost 10 years, and 30 per cent higher than two years ago.

Kevin Gardiner, UK economist at Morgan Stanley investment bank in London, says the pound's current level is close to matching its overvaluation of the early 1980s.

The real exchange rate is trading at levels more expensive on some measures than the 1980s, he says. Exporters are squealing.

By traditional measurements, the pound may indeed be overvalued. Most economists attempt to calculate a currency's "fair value" by looking at how much a standard basket of goods and services costs in different countries (its purchasing-power parity) and by looking at interest-rate differentials with trading partners. On this measure, sterling's "fair value" would be somewhere between DM2.50 and DM2.70. That would imply that the currency has indeed overshoot and could be expected eventually to fall back towards a lower rate.

But Mark Salmon, the Deutsche Morgan Grenfell professor of financial markets at London's City University, disagrees with that conclusion. "Historically, sterling is not very high at the moment," he says. "In fact, sterling has merely regained its strength: people who feel it is overvalued are



people who have been living off its weakness."

Prof Salmon argues that the pound was substantially undervalued in the years after its ejection from the ERM. Now, the introduction of the European single currency has moved the "burden of uncertainty" away from the UK to Europe, making sterling more attractive. "With British policy formulation being relatively clear, the markets are more worried about the stability of the euro," he says.

One crude way to judge which of these two views of sterling is the more plausible is to look at the effects of the currency's rise in the real economy. So far, despite all the exporters' cries of pain, the economy has not exactly buckled under the strain, at least not yet.

Simon Rubinszov, chief economist at Capel-Cure Myers capital management, argues that the economy is better able to withstand a strong pound than during the dark days of ERM membership between 1990 and 1992. "Fundamentally I believe the manufacturing base has been significantly improved. Yes, [export] volumes have been under pressure and profit margins of exporters are being squeezed. But they still remain pretty high by recent standards."

Using a rough measure of UK unit wage costs and input prices to show relative profit margins between exports and domestic production, it appears that UK manufacturers using sterling's ejection from ERM in 1992 to take "windfall" profits. They did not take the opportunity of a gain in com-

petitiveness to increase overseas market share. Now sterling has returned to the same level as during its membership of the ERM, exporters have cut back profit margins to compensate. But market share has not suffered.

That view is supported by the improvement in the balance of payments. In spite of the strength of sterling, which reached DM3.05 in July 1997, the UK recorded a current account surplus of £4.5bn, its first for 12 years. The improvement came mainly from higher-than-expected exports of services and "invisibles" (overseas investments, profits and interest payments), which reached a record surplus of £17.5bn.

Exports of goods, in contrast, remained in deficit by just under £3bn. But that level has been almost unchanged during the 1990s, whatever the strength of sterling. In 1995, when sterling had been in its post-ERM doldrums for three years, the deficit in goods trade still stood at £11.5bn.

If the economy in general can tolerate sterling at this level, some can stand it better than others. The UK car and electronics sectors, for example, have received a productivity boost from the heavy overseas investment from Japan and South Korea that has taken place since the start of the 1990s. Added value per head is estimated to be 40 per cent higher in foreign-owned manufacturing companies than in UK companies, meaning those companies have a significant advantage in export markets.

"We would add that Japa-

nese companies are more adept at having to compete with a rising exchange rate," says Mr Rubinszov. "They have, after all, through much of the past 15 years had to contend with the appreciation of the yen, yet still managed to make massive inroads in markets around the world."

Currency fluctuations aside, the key factor behind export growth is the strength of demand in overseas markets. As the UK's largest export markets in Europe move out of the first phase of their recovery, conditions could improve for manufacturers.

Whether that proves true or not, Europe is likely to prove more important in determining the future rate of sterling than whether the pound is "really" overvalued or whether particular bits of the economy are suffering. If sterling were to enter ERM it would be likely to go in at or near the market rate at the time. Moreover, the European Union institutions, in making a choice of entry rate, would include in the calculations the unusually large contribution to the UK economy of financial services, which continue to thrive at current rates. Either way, that would point to a entry level for sterling at or near DM3.

Obviously, the pound is not likely to go into ERM for a while. Even so, with the euro to get its go-ahead in May, the single currency is still likely to exert a powerful influence on the pound, limiting any decline. And if sterling does go in, it would be likely to lock in what many people see as an anomalously high rate forever.

Financial Times Seminar

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April 1 1998

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Wednesday April 1 1998

Cheap oil: who needs it?

The Organisation of Petroleum Exporting Countries can no longer scare the children as it did in the 1970s. But the revival of the oil cartel from its long torpor creates a disturbing echo.

In real terms, crude oil now costs about the same as 25 years ago. Few then foresaw the cataclysm which was to overtake the oil market - when Opec cut production and forced the price up in stages to a peak of more than \$50 per barrel in today's money.

Could it happen again? The markets think not. The announcement on Monday that the 11 Opec countries and five non-members, including Norway, intended to cut production by about 1.5m barrels per day was greeted with something of a yawn. Prices eased slightly, although they are still above the nine-year low of less than \$12 per barrel reached on March 16.

There are good reasons for the market's scepticism - in the short to medium term at least. High prices in the 1970s and 1980s made consumers and producers much more efficient. Less oil is now needed for each unit of economic output, and supplies are greatly diversified. Opec now controls only a third of world output compared with half in 1974. More important, high taxes have supplanted high prices as the incentive for efficiency gains in many countries. Oil producers may be selling crude for \$14 per barrel, but European consumers are paying about \$180 per barrel at the petrol pump. As a consequence, demand is rising only at about 2% per cent a year.

For these reasons, the oil cartel will have a hard struggle to raise prices much above present levels. There will be for some time a

large excess of potential supply which can be pumped at almost zero marginal cost in the Middle East and less than \$5 from offshore fields. This creates huge incentives to cheat. Meanwhile new technology continues to push production costs down.

Nevertheless, a modest but steady growth in demand - which might accelerate a little when Asia emerges from its financial crisis - will progressively strengthen Opec's hold over the market. Proved oil reserves rose sharply after 1985, and have remained at about 1,000bn barrels for the last 10 years.

However, most of the increase was in the Middle East. Saudi Arabia, for example, pumped only 2m b/d in 1985, compared with some 8.5m b/d in January. Total Middle East production rose by half in the decade to 1985.

Low prices will encourage this shift. It is impossible to guess what new discoveries will be made outside Opec, but the decision of Norway to support the cartel suggests how the old alliance might be strengthened. Another oil shock may be distant, but the industrial powers need to keep taking sensible doses of preventive medicine to curb demand. Fuel taxes are already high in Europe. They may need to go higher if governments are to meet their commitments to reduce global warming. This is more urgent in the US, where oil consumption per capita is twice that in Europe.

This week's move by Opec is too feeble to reduce domestic gasoline taxes in the US to increased oil prices. But it might prompt a few bad memories - no bad thing if it leads policymakers to put oil back on the agenda.

Entrepreneurs

The introduction of the euro will create a multitude of new business opportunities. The question is whether Europe's entrepreneurs and their financiers are ready to exploit them. A report by the European Commission, being presented to member states this month, seeks to improve the small business environment.

The EU, and in particular continental Europe, has a poor record on small business financing and start-ups. Bank lending still dominates in many countries, even though equity financing is often a more appropriate way of funding new companies.

The problem is not, as is sometimes supposed, as simple as a lack of money. Anecdotal evidence suggests that venture capitalists are chasing projects.

A more liquid public market for small firms, like Nasdaq in the US, would help to channel this money more efficiently.

The last few years have seen alternative markets grow rapidly, with the establishment of two European markets, Easdaq and EuroNM. The Commission has sensible proposals to take these improvements further. These include the establishment of a "one passport" procedure, to allow companies to list in several countries without preparing separate documentation, and a review of the taxation and regulation of venture capital funds.

The bigger problem, though, is on the demand side. Business start-ups in Europe are being stifled for a whole range of cultural and structural reasons.

The Commission's report highlights some of these. They include the costs and bureaucracy involved in starting up a business; the high cost of failure; the reluctance of many entrepreneurs to accept the dilution of ownership which equity finance requires; and Europe's poor patent laws.

But the obstacles of Europe's inflexible labour markets, and its over-regulated and over-subsidised product markets, may be even more important. The push for a 35-hour week in France and Italy, and the slow rate at which state aids are being withdrawn, show how far many countries are from making progress. The prospects for a more integrated European capital market are good. But this would not make the EU like the US. Individual member governments must remove the structural obstacles to business start-ups. Then, perhaps, we might see the explosion in new business that they hope Euro will bring.

Cypriot spat

Yesterday's start to the Greek Cypriot government's negotiations with the European Union could hardly have been applauded by the Turks. But their warning of permanent partition of the divided island, or even war, is dangerous and counter-productive. It plays into the hands of the Greeks by effectively lowering the standard of responsible behaviour they must show over the next 3-4 years in the Cyprus negotiations.

To some extent, mainland and Cypriot Turks were bound to over-react this week in ceremonies designed to parody, parody and protest what was happening in Brussels. Turkish and Turkish Cypriot leaders announced they would form a single economic market, and threatened to integrate totally if Greek Cyprus does not drop its EU bid. Rauf Denktaş, the Turkish Cypriot leader, attacked the EU for creating "complete division" in the island. Small Cypriot, Turkey's foreign minister, stepped up the rhetoric. He warned of "very dangerous" escalation in the eastern Mediterranean, with the Greek Cypriots "paving the way to another war on the island" in which Turkish Cypriots would have Ankara's total support.

Clearly, Ankara no longer feels

any need or desire to try to impose moderation on Mr Denktaş. This is a pity. Some 83m mainland Turks are in danger of being dragged by 200,000 Cypriot Turks. The EU has treated Turkey rather shabbily, but it has at least conceded Turkey's eligibility as a member and recently offered closer economic ties. Ankara should focus on making Brussels live up to these new promises.

If, in several years time, Greek Cypriots negotiators have totally failed to get Turkish Cypriots to join them, most EU members could face an awful choice - block Cyprus or see Greece carry out its threat to block five other applicants from eastern Europe. The Greek menace is unfortunately real, because accession requires parliamentary ratification in every EU state. But it would be massively short-sighted for the Greek side to push matters to such a crisis point that the only reason that Greek Cyprus slipped into the EU was to avoid keeping eastern Europe out. Such a crisis would undo the recent improvement in Greece's relations with the EU and give Greek Cyprus a sour EU debut.

By far the best outcome, for which all should press, would bring Cypriot Turkish and Greek together under a European roof.

A bang or a whimper?

An inefficient system for allocating capital is the issue at the heart of Japan's decision to launch today's Big Bang, says Gillian Tett

From the point of view of the rest of the world, April Fool's Day seems an appropriate occasion on which to start Japan's Big Bang.

Previous deregulations of its financial markets have often been disappointing. Promises have come and gone. And a plan launched when the financial sector and the economy as a whole were at least stable is now being overshadowed by gathering economic gloom and extreme financial anxiety. So is Big Bang going to be a damp squib? And if it is, what would be the consequences?

The essential problem Japan is seeking to solve through Big Bang is that, since the second world war, the government has used the financial sector to turn household savings into cheap banking loans for industry. This built Japan's manufacturing machine. But the price has been high. As well as cheating savers, it left banks uncompetitive and capital markets underdeveloped, while it limited Tokyo's ability to act as an international financial centre. It also allowed bureaucrats to meddle in financial affairs.

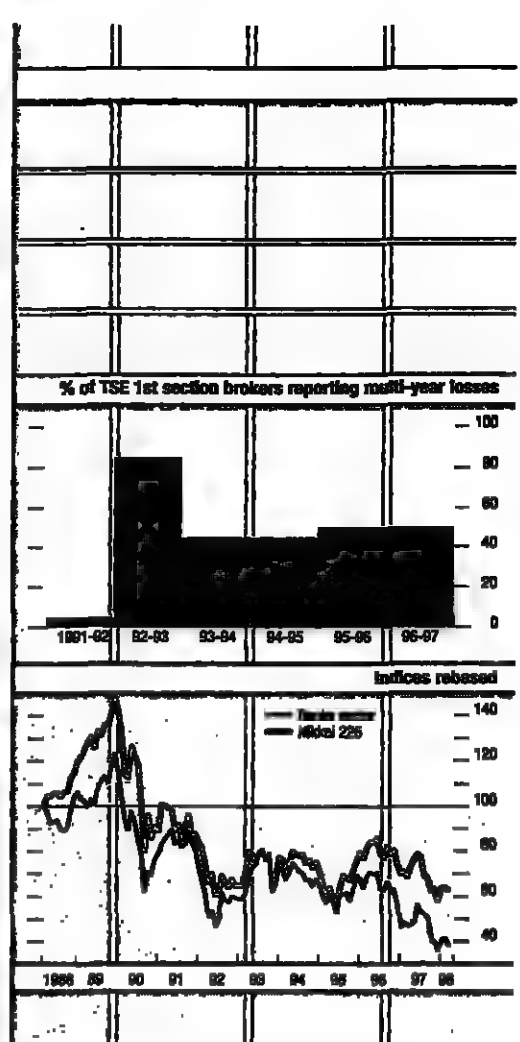
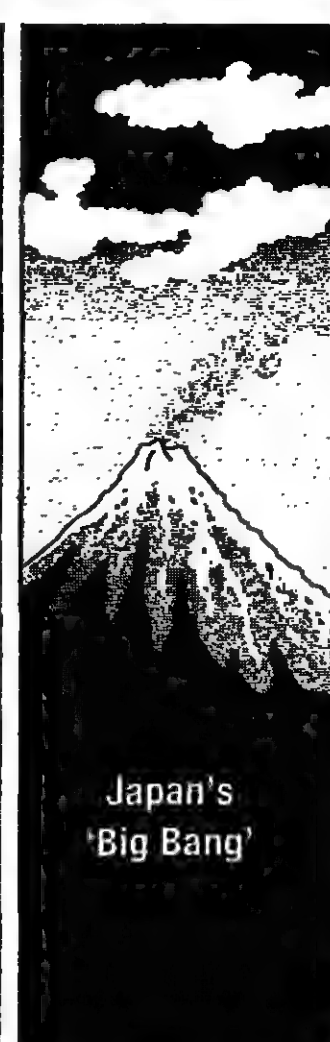
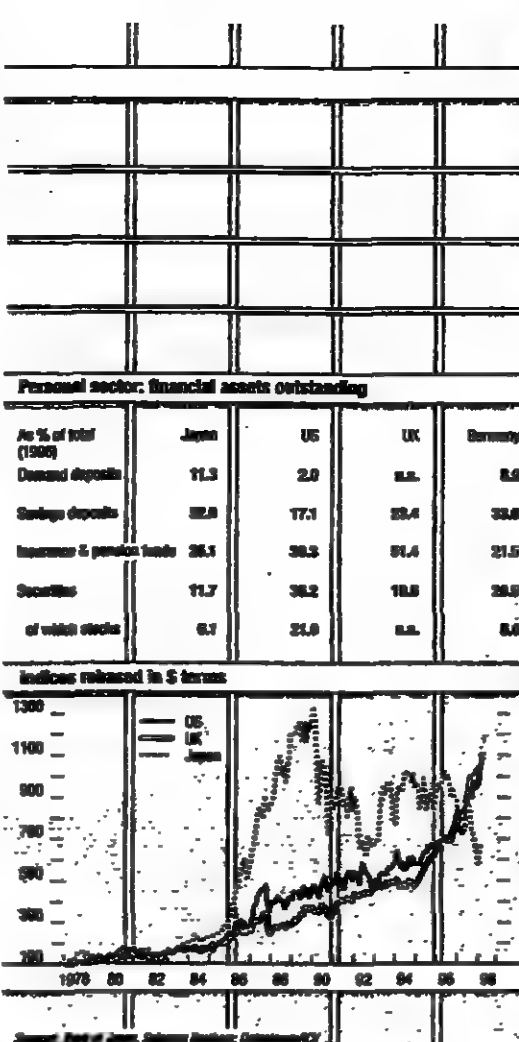
The measure of Big Bang's success, therefore, depends on three outcomes. Can it revitalise Tokyo as a world financial centre after years in which it has fallen behind? Can it offer new savings choices to boost returns to consumers who currently place 45 per cent of their savings in time deposits that generally pay a miserable 0.1 per cent annual interest? And can it transform the way the world's second-largest economy uses its ¥1,200,000bn (\$80,000bn) pot of savings? "We know there is no alternative to Big Bang," says Yasuo Kaneko, chairman of the Nikko research centre. Except, of course, a failure to address these issues.

On paper, the reforms look ambitious. They officially start today with two important changes: the lifting of fixed brokerage commissions on equity deals over ¥50m and the partial liberalisation of foreign exchange dealing and cross-border capital transactions.

These measures were first promised 18 months ago. In addition, there are 2,000 pages of legislation to support Big Bang, which have already been submitted to parliament and will probably be passed in June. Over the next three years, these numerous measures will include those that aim to:

- Tear down barriers between banks and brokers. This would allow the institutions to compete directly in each other's territory.
- Encourage more financial innovation by making it easier for companies to introduce new products. This would be done by removing barriers on such innovations as advanced derivatives and new mutual funds.
- Improve asset-management services, by allowing companies greater choice of who may manage their pension fund. Banks would also be permitted to enter the mutual fund market.
- Encourage more restructuring by allowing financial holding companies to be set up. This could make it easier to merge groups and hence to streamline operations.

If all these measures were carried out, the impact would be great. Free competition between banks and brokers, for example, could force many to close or merge. Developing the mutual



fund market would create huge asset-management opportunities for western and Japanese firms. Moving retail savings out of bank accounts into securities could boost the equity and capital markets. Offering companies more freedom to choose sophisticated financial products could lead to disintermediation, reducing the role of the banks. "Japan's economy is currently based around indirect financing [banks]," says Yoshiaki Kaneko, senior managing director of the Tokyo Stock Exchange. "In future direct financing [through the capital markets] will prevail."

The reforms could even attract back some of the international business that Tokyo has lost in recent decades. While London and New York have surged, the volume of trading in Tokyo is now only about half of what it was in 1989 and the value is less than that.

But the question is: will the reforms be carried out as promised? Those who think it will point to some hopeful developments. The measures taken today are one: they are happening on time. The willingness to let Yamaiichi Securities and two other large financial institutions go bust last November was another indication of the government's willingness to shake up the financial system. People are still reeling from the shock. A third sign of change is that, over the past year, a host of foreign companies such as Swiss Bank Corporation, Fidelity and Merrill Lynch have boosted their presence in Tokyo. Some foreigners, at least, seem to have confidence in Japan's financial reforms.

But as some people rush in, others remain cautious. In recent months, they point out, there have been disturbing hints that the government's commitment to reform may be wavering. One sign is that some of the reforms being implemented today contain

crucial "catches". The foreign exchange reforms, for example, abolish reporting requirements on cross-border transactions over ¥5m. But the Ministry of Finance quietly decided last month that transactions above ¥2m must be reported to the tax office for "monitoring".

Another disquieting signal is the government's delay in tackling other tasks needed to make Tokyo an attractive financial centre. Tax reforms, such as abolishing withholding tax for foreign investors, are barely even being discussed. Attempts to reform Japan's regulatory system are, at best, confusing. This summer, for example, the government has pledged to create a new financial supervisory agency. But several "details" are still undecided, such as who will run it, who will staff it and precisely what its mandate should be. And there are only two months to go before the new regulatory authority starts.

But the biggest cause for concern

is changes allowing banks to disguise falling land and equity prices. It has also delayed the imposition of tighter reporting requirements on domestic banks.

It is, of course, possible that this may prove nothing worse than a blip. "These more or less emergency measures... [are] to prevent a meltdown and restore some confidence," says Mikio Wakatsuki, a former governor of the Bank of Japan. "If the worst is over I'm sure that... bigger forces will push this Big Bang reform."

It is true that the government could not return to the old system now - even if it wanted to. Change is being driven by market pressure, as well as government decree. Since 1998 large companies have increased their reliance on the capital markets for financing, issuing bonds and equity rather than borrowing from banks.

Moreover, the market pressure for reform is unmistakable when you look at share prices. In the past year, banking and brokerage share prices have gyrated as investors attempt to force more discipline on companies. Much of the pressure is coming from foreigners: foreign investors are involved in 45 per cent of all trades on the Tokyo Stock Exchange, according to Pehman Smithers of ING Barings.

The abolition of foreign exchange controls will leave domestic companies exposed to more competition, since it will make it easier for companies and savers alike to take business offshore. Recent financial turmoil has left savers looking for new investment instruments, and convinced foreign companies that a mutual fund boom is inevitable as consumers start to abandon low-yielding bank accounts.

"I think the Big Bang train is already out of the station," argues Phillip Colebatch, president of Credit Suisse Asset Man-

These measures are to prevent a meltdown and restore some confidence'

cern is that the government does not seem to have abandoned its protective instincts. It had seemed that a shakeout of the financial sector was starting when Yamaiichi Securities was allowed to collapse, but policy has since shifted.

Last month, ¥1,800bn of public funds were injected into the capital base of 31 banks, including strong ones that did not want the money and weak ones with an uncertain future. The government recently approved account-

*Big Bang or Big Whimper? Peter del Vecchio, \$100, Asian Law Practice Publishing (tel: 852-2942-9000)

OBSERVER

Iacocca's career reaches its peak

There's been a change in the pecking order at Koo Koo Roo, the oddly named Los Angeles-based purveyor of hot chicken dinners. Lee Iacocca, whose name was synonymous with Chrysler for so many years, is now ruling the roost.

The engineer from Allentown, Pennsylvania, hasn't been short of job offers since he quit the auto maker a few years back. He has been much sought after by a new venture to sell electric vehicles, but also found a nesting box on the Koo Koo Roo board. Now chairman, Kenneth Breen is leaving after having heart surgery, and Iacocca has topped on to his perch.

The man who brought you the Ford Mustang in 1964 and later twice pulled Chrysler back from the brink of bankruptcy will have plenty to do at Koo Koo Roo. The townswoman outfit - which also owns Heminger's - got its wings clipped when it tried moving into Washington: two of its three capital outlets closed within a year.

Iacocca and new chief executive William Allen have been given free range to break a few eggs with a spot of restructuring. One casualty will be the Color Me Mine subsidiary, where punters are invited to buy pottery then paint it. "This is more than putting paint on a surface," runs the official line. "This is about filling a need for quality family recreation." Koo Koo Roo is selling it anyway.

Observer meets with interest Koo

Fuel ahead

Japan's Big Bang deregulation starts today - on the petrol station forecourt. After decades of claiming that it was too dangerous to let ordinary motorists fill up their tanks, the Japanese government is allowing self-service petrol stations.

The old law has certainly ensured that motorists feel wanted: petrol stations have smiling attendants in crisp white uniforms, who are often sufficiently friendly, shouting "Welcome!" as they rush to dispense the fuel. When you're leaving, they stop the traffic and bow as you pull away.

Now lots of companies are planning to open self-service outlets - though extra regulations mean it's a job for serious investors. Customers wrestling with petrol hoses or confiding with other cars on the way out at least have the consolation of getting petrol up to 32 cents cheaper. There's plenty of mileage in this Big Bang.

Ploughing on

European Union farm commissioner Franz Fischler was asking for it yesterday when he used nautical references to sell his plans for reforming the Common Agricultural Policy to sceptical agriculture ministers. They were all in the same boat and had to steer the good ship CAP into the next century were just two of the salty similes.

It was left to German farm minister Jochen Borchert to say what everyone was thinking: "The Titanic was a very good ship."

Still tuned

A white knight has ridden to the temporary rescue of CETV. The Hong Kong-based television broadcaster, headed by Robert Chua, has been struggling for survival since a consortium of mainland Chinese

Financial Times

100 years ago

Yet More Telephone Trouble. The National Telephone Company, the target of frequent complaints about the level of service, draws attention to what it describes as "the proved fact that subscribers frequently make it impossible for the operator properly to attend to her duties because they bawl along the call-wire at the same time with other subscribers, and because they employ the call-wire for abusing the operators, frequently using very violent and brutal language to them, so much so that at times they drive them into hysterics." No one can condone the use of violent and abusive language to young ladies, even if they be telephone girls.

50 years ago

Swiss Franc Deals in Paris. Paris, March 31. The Swiss franc will be introduced on the Paris free foreign exchange market tomorrow under the same regulations governing dollars and escudos. Exporters may sell 50 per cent of their sales proceeds on the free market and the remainder to the Exchange Stabilisation Fund at the official rate. The National Bank of Belgium is establishing from Monday next a "tourist franc" for Belgian nationals at a rate of 7 French francs per Belgian franc (in place of the official rate of 4.83).

Faux pas encore

The plan announced yesterday by Franco's Sociedad General de Seguros to establish SG as the global brand for all international commercial and investment banking, asset management and private banking operations has been somewhat undermined by a number of exceptions.

Most prominent of these is SocGen Asset Management, which is being launched with great fanfare in the UK. So much has been invested in promoting the SocGen name that the parent bank admits this operation will only shift to SG in "due course".

THE LEX COLUMN

More whimper than bang

The auguries for Japan's "Big Bang" financial deregulation today are hardly auspicious. The organisation responsible for promoting it, the Ministry of Finance, is mired in an unprecedented and debilitating corruption scandal. The brokers and banks most affected have tarnished reputations, shrinking profits and weak finances - hardly a recipe for reforming zeal. Fear of financial meltdown has also seen the government retreat from the spirit of Big Bang in a number of ways.

No wonder there is an absence of fireworks. But the problems go deeper. Tokyo may aspire to matching the City of London and Wall Street, to "free, fair and global" financial markets. But this is not something that can be delivered top-down by administrative fiat. It needs a sympathetic culture in which to flourish. Right now, that is lacking. By instinct the Ministry of Finance wishes to control, while Japanese brokers and banks are not used to competing in the domestic market.

For Big Bang to succeed, these attitudes must change. Regulators and operators will have to embrace the spirit of competition. This will involve reducing capacity and improving returns, a point still poorly appreciated and unlikely to change fast. Still, it would be wrong to be too cynical about Big Bang. Japanese banks and brokers may be tardy and bewildered about how to react, but as foreigners make increasing inroads into their markets they will be forced to respond. And institutional and retail investors, fed up with corruption and sub-par returns, are hardly in the most loyal of moods.

Many of the weaker banks and brokers will not survive. Unlike in the UK, where smaller businesses were subsumed in a wave of merger and acquisition activity, rescue is unlikely. Low returns, the difficulty of firing staff and the risk of *tobashi* scandals, such as at Yamaichi, are a powerful disincentive to suitors.

Motorola

How should Motorola restructure itself? According to one report, the US-based cellular phone and computer chip company, dogged by earnings disappointments, plans to split into two divisions, one serving consumers and the other industrial customers. This would help the company address at least some of its problems.

MLA deals in Germany

By volume QM in 1997



First, the creation of a consumer group should help improve the marketing of its products. As well as lagging behind competitors Nokia and Ericsson in the introduction of handset technology, it has also been slower to realise that appearances count too. Motorola phones still look like gadgets, while Nokia handsets are fashion accessories. Such a restructuring might also help rid the company of ineffectual, and even produce cost savings as a result of consolidation.

But some problems will be difficult to address through a redrawing of lines: most importantly, the time taken to bring products to market. At the start of the decade, a complacent, arrogant Motorola allowed competitors to steal a couple of years' march in the switch from analog to digital handsets. Despite successes in some areas, it is still seen as a laggard in an unforgiving industry. More broadly, Motorola faces slowing sales in Asia, and pricing pressures in its semiconductor business. Yesterday's share price improvement is justifiable only if investors are prepared to wait several years for a potential cultural change to produce a recovery in earnings.

German house banks

Does the dominance of US investment banks in German league tables signal the house banks' demise? House bank relations - based on lending and underpinned by long-term shareholdings and a board presence - have long been under pressure at the biggest corporates. Deregulation

has allowed these larger firms to access more competitive financing through capital markets. Deutsche Bank, for example, is no longer by right Daimler-Benz's in-house adviser simply because of its large shareholding and seat on the board. Far from it.

But the Mittelstand has been slower to cut the apron strings of long-term bank financing. Commercial banks have also yet to recognise their role in creating an equity culture more favourable to initial public offerings by dynamic, young companies. And given the immature state of the German venture capital industry, their reluctance to finance start-ups is clearly harmful for the economy.

Furthermore, unwinding the web of cross-shareholdings that banks dominate should both stimulate corporate restructuring and expose sluggish managements. For bank shareholdings, re-evaluating cosy, long-term relationships that produce only low-margin lending business should be no bad thing. And developing better capital markets skills should narrow the gap with the US houses. If they do not seize the opportunities their longstanding relations offer them, their nimble competitors will.

Sterling

For all the fancy valuation models, currencies remain simple creatures; they head in one direction until given a solid reason to do otherwise. So it is with sterling, as Gordon Brown, the chancellor, and UK manufacturers are busy discovering. Mr Brown, of course, is partly to blame for sterling's level. If fiscal policy were tighter, sterling would probably be lower than it is today. But the pound's current overshooting of "fair value" is more a reflection of the vagaries of currency markets than policy deficiencies. Given that, Mr Brown is right to resist those pleading for a change of course.

What will cause sterling to retreat? Clear evidence that it is damaging the economy, coupled with the prospect of lower interest rates. Neither is yet present. Export orders may be slowing, but the outlook is still positive and margins reasonable. Nor have interest rates clearly peaked. But it is only a matter of months before they do - and before firmer evidence emerges of the damage to exporters.

Bank chief in devaluation call to aid Russian exports

By Chryssie Freedland and John Thornhill in Moscow

Sergei Dubinin, the governor of Russia's central bank, said yesterday the ruble must be gently devalued in line with inflation, to help Russia's battered exporters compete globally.

Mr Dubinin said Russia, which earlier this year came under severe pressure from sceptical investors, had overcome the impact of the Asian crisis.

"We are really satisfied with the fact we have been able to overcome the consequences of the financial crisis which happened in world markets," he said in an interview with the Financial Times.

However, the central bank, one of the most respected and stable institutions in Russia, is concerned the country's balance of trade is being eroded by the ruble's appreciation in real terms.

"At the moment, objectively, there is a strengthening of the ruble," Mr Dubinin said. "The decline of the ruble against the dollar is proceeding more slowly than inflation."

Mr Dubinin said the real appreciation of the ruble was good for foreign investors but had hurt the country's exporters. The central bank was now seeking to speed up the ruble's depreciation, in line with inflation, to ensure a "neutral" monetary policy.



Dubinin: exporters hurt

After President Boris Yeltsin's stunning dismissal of the cabinet last week, the central bank has emerged as one of the country's few rocks of stability.

Mr Yeltsin has vowed not to change the government's economic course and yesterday said Mikhail Zadornov, the reformist finance minister, would keep his job.

One of the central tenets of Russian policy this year has been to maintain a stable ruble. Now, having saved the ruble by temporarily raising interest rates above 40 per cent, the central bank must try to manage the flood of hot foreign money into high-yielding Russian securities.

Foreigners now own about 30 per cent of the Russian treasury bill market, far exceeding the central bank's foreign currency reserves of \$15bn.

But Mr Dubinin said he did not think this high level of foreign involvement posed a danger to the ruble, insisting that the most important factor was domestic confidence.

But he admitted Russia's growth prospects might be dimmed by the high interest rates. He said the central bank now predicted the economy would grow this year by between 0 and 2 per cent.

The central bank chief said he thought interest rates would fall to below 20 per cent by the year-end, possibly as low as 10 per cent.

Weakness in the Dollar, Page 2

Watchdog raises the stakes in battle with Manila exchange

By Justin Marozzi in Manila

The Philippine Securities and Exchange Commission yesterday threatened to revoke the stock exchange's licence unless it reformed its procedures for investigating insider dealing by today.

Brokers dismissed the possibility of trading being suspended today and roundly criticised the chairman of the market watchdog, Perfecto Yasay, for his combative remarks.

"Just think of foreign fund managers wanting to sell and not being able to," said one head of trading at a foreign brokerage. "It would be extremely negative for the image of this country."

However, the struggle is the latest of a number of cases in which legal processes have been undermined by arbitrary action in the Philippines. Last year, the credibility of the privatisation process for the Subic Bay container terminal was undermined by the intervention of President

Fidel Ramos to override the authority's decision.

Mr Yasay earlier said the exchange would have its licence suspended or would be placed under a management committee unless a management committee was formed, required before the bureau is granted self-regulatory status, was introduced by today.

"The Philippine Stock Exchange will be subject to a suspensive position or might be placed under a management committee," the SEC chairman warned. "We want them to know that we're not taking this lightly. In the past we have granted them so many extensions, but I tell you, we really mean it this time."

Other options included the takeover of the exchange by "reform-minded members" or the collapse of the exchange's corporate licence and "the creation of a new exchange".

The long-running turf battle between the PSE and SEC over the exchange's efforts to achieve self-regulatory status now centres on

how the exchange will investigate insider dealing.

At present, any investigation requires the prior approval of the president of the exchange. The SEC argues that the president is too beholden to the broker-dominated board of the exchange. It would like to see completely independent investigations. The exchange counters that the loss of the president's powers to approve investigations would be an unacceptable dilution of his authority.

"I think Yasay is taking inordinate risks for something that at the end of the day is not that important," said a former governor of the exchange. "There is clearly no way the April 1 deadline can be met and so he has backed himself into a corner."

Approval of the reform by the PSE would require an amendment to its by-laws, which could only be passed by a two-thirds majority of its 184 members at a general meeting.

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Directory of online services via FT Electronic Publishing

FT now has the Financial Times web site: online news, comment and analysis. <http://www.ft.com>

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South Korean riot police on standby in Seoul yesterday as a demonstration took place over the economy. Asia reports, Page 6

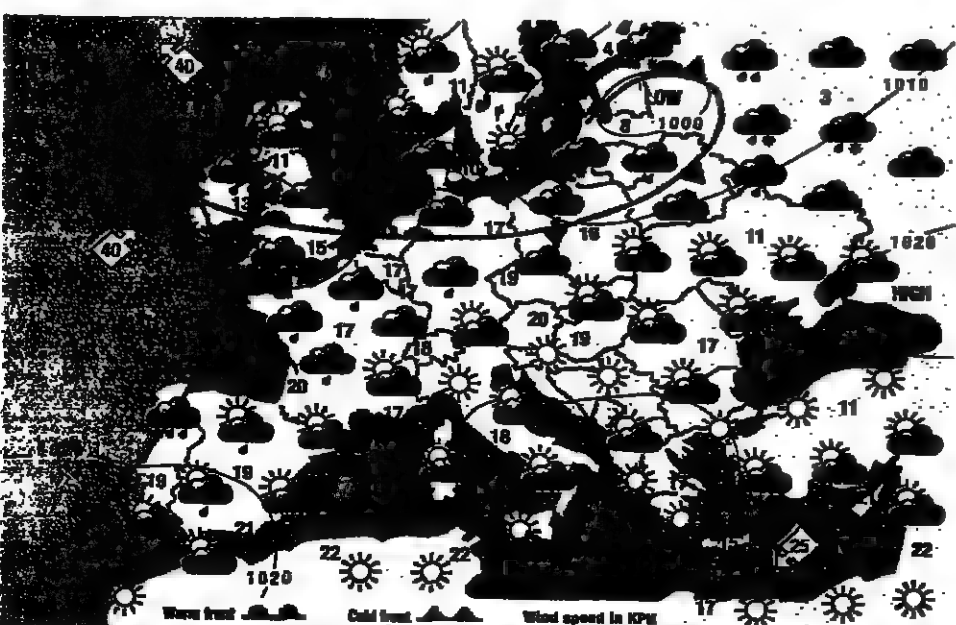
FT WEATHER GUIDE

Europe today

Scandinavia will be mostly dry with sunny spells, although it will be cold in the north and there will be showers in southern Sweden and western Norway. France, the Low Countries, northern Germany and the west of the Iberian peninsula will be cloudy and wet. Much of central and Eastern Europe will be mild with sunshine. The Baltic states and western Russia will be unsettled, with rain in the south and sleet in the north. The Mediterranean will be settled and sunny although it will stay cool in the east.

Five-day forecast

Scandinavia will be mostly dry with sunny spells, but it will be cold in the north. Most of central and Eastern Europe will be mild and fairly sunny. The Balkans and western Russia will have rain or sleet. Western Europe will continue unsettled, but the Mediterranean will be dry and sunny.



Situation at midday. Temperatures maximum for day. Forecasts by FT WEATHER CENTRE

TODAY'S TEMPERATURES

Location	Temp
Madrid	20
Barcelona	20
Paris	13
London	12
Amsterdam	12
Brussels	12
Frankfurt	12
Berlin	12
Munich	12
Vienna	12
Zurich	12
Stockholm	12
Helsinki	12
Tallinn	12
Riga	12
Warsaw	12
Budapest	12
Prague	12
Bratislava	12
Belgrade	12
Sofia	12
Thessalonika	12
Atena	12
Jerusalem	12
Cairo	12
Rabat	12
Nairobi	12
Accra	12
Lagos	12
Abuja	12
Windhoek	12
Harare	12
Maputo	12
Luanda	12
Windhoek	12
Harare	12
Maputo	12
Luanda	12

Location	Temp
Madrid	20
Barcelona	20
Paris	13
London	12
Amsterdam	12
Brussels	12
Frankfurt	12
Berlin	12
Munich	12
Vienna	12
Zurich	12
Stockholm	12
Helsinki	12
Tallinn	12
Riga	12
Warsaw	12
Budapest	12
Prague	12
Bratislava	12
Belgrade	12
Sofia	12
Thessalonika	12
Atena	12
Jerusalem	12
Cairo	12
Rabat	12
Nairobi	12
Accra	12
Lagos	12
Abuja	12
Windhoek	12
Harare	12
Maputo	12
Luanda	12
Windhoek	12
Harare	12
Maputo	12
Luanda	12

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INSIDE

Quarter ends in European records

The end of a phenomenal first quarter for equities saw records on European bourses, including Copenhagen, Milan, Paris and Zurich. The S&P World Index gained 13.1 per cent. But analysts are nervous about the European bull market and are expecting a 5-10 per cent correction in the next 12 months. Page 36

Endesa seeks gas partnership

Endesa, the Spanish power group scheduled for further privatisation, said it was seeking a partnership with a gas conglomerate to diversify its business and ensure its leadership in domestic electricity generation. The utility will continue to expand in Latin America, step up investment in telecommunications and shed staff to overcome falling income caused by tariff cuts and electricity deregulation in Spain. Page 20

30-year Tips set to be auctioned

The US Treasury is expected today to announce the auction of the first 30-year, inflation-indexed bonds. The sale of 30-year Tips, or Treasury Index protected securities, will come amid concern that inflation will emerge by the year-end. Analysts expect \$8bn or more of the new securities to be sold. Page 24

Heart treatment results boost Scios

Shares in Scios, the US biotechnology company, surged after it released clinical results for a treatment for acute congestive heart failure and said it would be filing for approval with the Food & Drug Administration in the next 30 days. Richard Casey, Scios' chief executive, predicted that global sales of the product would reach nearly \$2bn a year. Page 21

Funds injection lifts Nikkei

A last-minute injection of public funds into the futures market lifted share prices in Tokyo on the last day of trading for the fiscal year. However, the Nikkei 225 index ended far short of the 18,000 level, regarded as an important benchmark. On the positive side was the expectation that public funds would be brought in to support stock prices. Page 36

Metromall accepts GUS bid

Great Universal Stores, the UK mail order house, appears to have won the battle for Metromall, the Illinois database marketing company. Metromall was the subject of rival bids from GUS and American Business Information of Omaha. Metromall's board said it was recommending GUS's bid of \$34.50 a share, valuing it at \$910m including debt. Page 22

Zimbabwe tobacco down 42%

Tobacco farmers were shocked when Zimbabwe's auction opened yesterday, with prices down 42 per cent on last year. While the industry had expected lower prices than in 1997 - when sales on the first day averaged 208 US cents a kilogram - there was widespread rejection of sales by growers after prices on one of the three floors averaged only 123.5 cents, and 119.3 cents on another floor. Page 35

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BMW warns rivals over R-R Motors

German auto group will cut supplies if it loses control

By Graham Dowling in Munich and Roger Taylor and Haig Simonian in London

BMW yesterday warned it would force the temporary closure of Rolls-Royce Motor Cars by cutting its supply of components if it lost control of the UK luxury car group to a rival bidder.

Graham Morris, chief executive of Rolls-Royce, said last night he was aware that Volkswagen had talked to Vickers, which owns Rolls-Royce, about the possibility of increasing its offer. However, it is understood Vickers has yet to receive a formal higher offer from VW. VW refused to comment.

Vickers said earlier it had entered into exclusive negotiations, thought to be one month, with BMW, and could not re-open talks with others. It said it remained happy with BMW's offer. Shareholders have to approve the sale.

Reports in Germany suggested VW would pay up to DM1.7bn (£550m), DM200m more than its original offer, topping BMW's £340m offer for Rolls-Royce. VW's new offer would also include a proposal to buy the Cosworth engines business, which is also owned by Vickers.

Even if VW did offer more, it might serve only to elicit a higher price from BMW. "Vickers are not going to be seduced away from BMW's safe offer by tempting proposals from VW which then prove hard to deliver," said one observer.

BMW's threat underlined its determination to take over Rolls-Royce. Bernd Pischetsrieder, BMW's chairman, said his company would immediately terminate supplies of engines and other components to Rolls-Royce, forcing a temporary closure. He said BMW supplied about 30 per cent of Rolls-Royce components.

"If somebody wants to shoulder that responsibility, then we will stop our supplies within a short period. Crews would have to close down. Nobody has the ability to take it up again in such a short period," he said.

The termination period for BMW's engine contract has been a secret. The period, believed to be one year, would make it difficult for VW to re-engineer Rolls-Royce's new models quickly enough to avoid disrupting production.

Mr Pischetsrieder also outlined plans to reshape Rolls-Royce's board with the inclusion of four non-executive directors. He said one would be an independent "diplomat" to help maintain Rolls-Royce's British image.

"We should follow British traditions. The company will remain British in the future. It will have even less BMW about it than it does today," Mr Pischetsrieder said.

He pledged increased investment on new models and higher output and employment. "We have done a lot of intellectual work in advance. We have a few surprises in the future for Crews."

Mr Pischetsrieder's comments came as BMW said net profits last year rose 52 per cent to DM1.35bn as sales increased 15 per cent to DM60.1bn. He said the strength of sterling was hurting profits at Rover, which had a pre-tax loss of £22m.



BMW chairman Bernd Pischetsrieder. "We should follow British traditions." Picture AP

Potential bidders claim Rosneft price is too high

By John Thornhill in Moscow

Two of Russia's biggest energy companies have warned that the starting price for the sale of the Rosneft oil group is too high, casting a cloud over the government's ambitious privatisation programme.

The government, which has staked its reputation on conducting a clean and competitive auction for the last big state-owned oil company, now seems certain to be drawn into a war of nerves with some of the country's most powerful businesses.

Ren Vyakhirev, chairman of Gazprom, the giant gas monopoly, said yesterday he was reconsidering his plans to bid for the government's 75 per cent stake in Rosneft because of the inflated price of \$2.1bn. Gazprom had announced earlier it would bid for the Rosneft shareholding in alliance with Lukoil, the big Russian oil concern, and Royal Dutch/Shell, the Anglo-Dutch energy group.

On Monday, another leading contender, Yukos, the newly-merged Russian oil group, announced it would not bid for Rosneft, claiming the price was \$800m above the company's true value.

But Boris Nemtsov, acting first deputy prime minister, said Rosneft's starting price would not be revised in spite of pressure from the energy companies. "Potential buyers do not want to part with their money and are trying to draw us into a discussion [about price]," he said. "But haggling is forbidden." Mr Vyakhirev "wants to pay less, but we want to receive more".

Glory Bednitskiy, Russian oil analyst at Salomon Smith Barney, said it was difficult to attach a market value to Rosneft, given its diverse collection of assets and strategic importance. But he suggested some companies might be bluffing when they said they would not bid.

"It is a closed auction so there is a little bit of game theory going on," he said.

The Russian government set the minimum price for Rosneft after asking Dresden Kleinwort Benson, the international investment bank, to conduct an independent valuation. Government officials said this showed Rosneft was worth between \$2.3bn to \$2.4bn in total. They also stipulated that the winning bidder must invest \$400m in Rosneft over the next three years. The auction closes on May 28.

Analysts say the government could raise \$70n this year by selling 10 shortlisted companies. However, some of Russia's most powerful groups, which have benefited from "sweetheart" privatisation deals, appear reluctant to bid up prices.

Russia's energy companies have also been squeezed by the fall in international oil prices - although the government has granted them temporary tariff concessions.

Liffe plans changes to take on rivals in run-up to Emu

By Emma Iskander

The London International Financial Futures and Options Exchange is planning sweeping changes to its governance structure in a drive to improve its decision-making.

The proposals, to be submitted next month to a vote by members, aim to increase Liffe's chances of competing with rival exchanges in the run-up to European economic and monetary union.

Liffe's governance working party, which includes members of the board and outside advisers, will propose reducing the number of directors from 24 to 12 by June. It will suggest an increase in the responsibilities of the chairman, who may have to meet annual performance targets. In a second stage, the board would be slashed to 18 directors.

"The current board was suitable for a stable environment," said George Cox, chairman of the working party. "In times of rapid change, we need a smaller board that can make decisions more efficiently."

Last week, David Kyte, one of Liffe's most prominent independent traders, resigned from the board in protest at what he described as the "apathy" of Liffe's management and its directors. He said the lack of decision-making was threatening Liffe's survival.

Competition among exchanges has intensified sharply in the past year as the advent of Emu threatens to shrink the derivatives market by reducing currency and interest rate risks among participating countries.

The electronic Frankfurt-based Deutsche Terminbörse overtook Liffe in the trading of Europe's most actively traded bond derivative, the futures contract on German government bonds.

Electronic trading is much cheaper than open outcry trading - Liffe's favoured trading method until recently. Last month, Liffe said it would spend £20m-£25m (\$33m-\$41m) - in addition to £10m already spent - to develop an electronic system capable of trading its main products.

Last week, Mr Kyte's company installed electronic trading terminals in London, linking half its 100 traders to the DTF's system.

Several trading houses have complained that Liffe's electronic system, which will only become available by the end of next year, is too expensive and taking too long to develop.

The responsibilities of Liffe's chairman - a largely ceremonial role - will be increased after the incumbent, Jack Wigglesworth, retires in June. Mr Cox said: "As the job is becoming more demanding, we will have to recruit a full-time chairman, possibly from outside Liffe," he said.

The chairman, until now always a board member, was traditionally appointed by colleagues.



No one fooled by end of year window dressing

In Tokyo it is March 31, rather than April 1, that is All Fools Day - in financial markets, anyway - as the annual balance sheet window dressing ritual reaches its climax.

You don't need to be a weird conspiracy theorist to believe there was something suspicious about Tuesday's late futures-led upsurge of 1.6 per cent in the Nikkei Average to 16,527. In Japan, banks' capital bases reflect their holdings of stocks at market valuations.

The Nikkei had a good run in January on the story that the authorities were targeting 18,000 by the financial year-end. However, particular index levels have had much less significance since the Japanese government pumped ¥1,800bn (\$13.6bn) into 21 leading banks a few weeks ago, and since the valuation rules were changed.

In any case, the common suggestion that the Nikkei tends to be inflated on March 31 and that the yen is hoisted by the repatriation of financial assets, clashes with the facts. The Nikkei has risen 4.7 per cent on average in the past three Aprils. Now the Post Office claims to be ready with \$7.4bn to support stock prices.

However, this year looks more difficult than ever before, given the interminable crisis of the 1990s. The Asian boom that earlier helped prop up Japan's economy has collapsed and an ever-widening trade surplus with the US cannot compensate. Industrial production fell 3.3 per cent in February and unemployment has hit a record 3.6 per cent. Tomorrow's latest Tankan business opinion survey is likely to be dire.

At about ¥133, the US dollar is close to a six-year high against the Japanese currency, and is 66 per cent above the low it touched three years ago. Perhaps Americans are not so worried about the weakness of the yen, being more concerned about inflation than jobs at the moment. However, Friday's Asia-Europe summit may find the Europeans less tolerant.

In spite of a likely \$100bn-plus current account surplus the yen is under serious downwards pressure. The "big bang" deregulation in the financial sector is allowing foreign institutions to lure hard-pressed Japanese savers into the booming and (relatively) high-yielding markets of the US and Europe. The Bank of Japan is flooding the system with liquidity, as shown by a 40 per cent rise in the BoJ's assets in a year; the money will spill out over the foreign exchanges, if not yet into the stock market.

Fortunately, foreign investors can take a more relaxed view of Japan nowadays. Its stock market has contracted to a World Index weighting of only 11 per cent, against a 45 per cent peak in 1989. It is still 24 per cent of the EAFE Index, which Americans use as a non-US benchmark, but that compares with Europe's 70 per cent.

Global bond investors, though, face a bigger challenge. Japanese government bonds represent 14 per cent of the global government bond index and this weighting could go much higher as Japanese borrowing expands while issuance elsewhere shrinks rapidly.

Ten-year JGB yields of 1.8 per cent, much lower than anywhere else, must rise in the medium term. But if Japan slides into a serious recession bond yields could sink even lower as the security of the capital becomes more important than the income.

As for equities, corporate profits are sliding and the average p/e ratio remains sky-high (about 50). But the cash flow multiple is relatively low (certainly by current US standards) and if there were any serious signs of corporate restructuring the Tokyo market might start to look cheap.

But, as has been evident since 1989, conditions have to get worse in Japan before they can improve. Now, they may get much worse.

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COMPANIES & FINANCE: ASIA-PACIFIC

RETAILING JAPAN GROUP'S HK ARM FACES SERIOUS FINANCIAL DIFFICULTY

Yaohan International in rescue negotiations

By John Hidding in Hong Kong

Yaohan International Holdings, the Hong Kong arm of the collapsed Japanese retailing group, yesterday warned it was facing serious financial difficulty and was in rescue talks with bankers and potential investors.

"The group's financial position may further deteriorate and if no new capital is injected, then the company may be forced into liquidation," it said.

It added that information concerning the use of corporate funds by former staff had been passed to Hong Kong's commercial crime bureau for investigation. Shares in the retailing, department store and property company plunged 75 per cent after the resumption of trading yesterday. The shares had been suspended since last September, when Yaohan Japan, the flagship of Kazuo Wada's retailing empire, collapsed with debts of ¥161.3bn (\$1.2bn).

The Wada family, which built Yaohan into one of

Asia's largest retailing groups, said at the time it planned to continue the group's international operations. However, the financial crisis at Yaohan in Japan and the impact of Asia's financial turmoil have hit several subsidiaries and associated companies.

Yaohan Hong Kong, the retailing arm of Yaohan International, filed for liquidation in November last year, forcing the closure of Yaohan department stores in the territory. Stakes in the group's catering and entertainment subsidiaries have also been sold to raise funds and ensure the survival of the Hong Kong operations.

While Yaohan's Hong Kong subsidiaries have generally been controlled directly by the Wada family, rather than through Yaohan Japan, they have also been affected by financial strains arising from an aggressive expansion strategy.

Yaohan International yesterday said it had total bank borrowings of HK\$431m (US\$55.6m) and a net asset deficit of HK\$41.7m at the

end of September last year. Since late 1997, the company added, it had received writs from creditors claiming about HK\$71m.

Trading results for the six months to the end of last September were also bleak, as the company suffered a net loss of HK\$1.36bn on turnover of HK\$332m. That compares with a net profit of HK\$61m for the 12 months to the end of March 1997, on turnover of HK\$3.89bn. The loss was largely the result of a HK\$1.16bn exceptional charge, which included provisions for doubtful debts and investments in an associate company.

Yaohan International declined to comment on the information passed to the crime bureau. It said new directors had been appointed in February to take over management and that provisions had been taken in respect of the information.

Lao Yuan-yi, joint managing director, said the company planned to appoint an international accounting firm to ascertain the group's financial position.

Japanese banks undermined as Nikkei ends year at 16,527

A lacklustre economy and poor earnings growth does not bode well for stocks, write Paul Abrahams and Gillian Tett

Earlier this year, Taku Yamazaki, policy chief of Japan's ruling Liberal Democratic party, warned that the country's financial system could not survive intact if the Nikkei 225 average closed below 18,000 at the end of the financial year.

Despite a last-hour rally, the index ended the year yesterday nearly 1,500 points short of Mr Yamazaki's target at 16,527.

The dangers described by Mr Yamazaki were very real. Japan's teetering banks have counted unrealised profits on equity holdings as tier two capital. But a sharply lower stock market meant many banks could lose all their unrealised profits and undermine their capital.

The effects would be twofold. First, the banks would need to reduce loan books, causing widespread bankruptcies. Second, many would no longer meet international capital adequacy requirements and would be unable to trade overseas.

But with yesterday's close,

the markets yawned - and with justification.

The reason was that the authorities had decided if they could not solve the problem, they would simply ignore it. They had introduced new rules allowing banks to value their equity holdings at either market value or at book value, which is normally higher.

Yesterday Yasuda Trust, one of the weakest Japanese banks, announced it had adopted the book valuation method, thereby reducing its parent losses last financial year from ¥294bn (\$2.2bn) to just ¥150bn.

The change is only an accounting one, and no economic value has been added. This has been acknowledged by banks such as Sanwa Bank, which says it will report using the new methodology, but also put the "old" figures in its annual report in an effort to show it has nothing to hide.

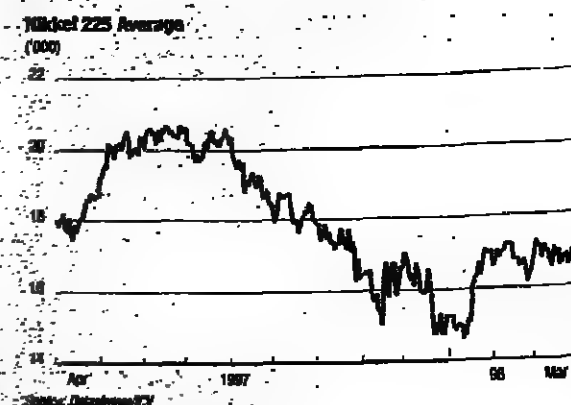
Such accounting chicanery has not helped the banks meet international capital adequacy standards.

The rules allow 45 per cent of equity holdings to be valued as tier two capital, but only valued at market rates. This problem was overcome by injections of public funds into the banks through preference shares.

Those that still did not reach the required ratios simply closed down their international operations. The ministry of finance said yesterday there were only 45 Japanese banks allowed to conduct business overseas, against 80 last year.

Nevertheless, politicians remain anxious about the level of the market. Although it has always been officially denied, most analysts believe public money held by the postal savings system has been used to pump up the market.

Alex Kinnmont, strategist at brokers Morgan Stanley, says normal investment in the equity market by the postal authorities - using trust banks as intermediaries - was ¥3,000bn a year in the early 1990s, but in



recent years the figure has nearly doubled.

Paulam Smithers, strategist at ING Barings, says that shortly before the government announced its latest economic package last Thursday, the trust banks made a block order of some 4,000 futures contracts - driving the market sharply higher.

The reason for this market manipulation is linked to the large cross-shareholdings of Japanese companies.

These are estimated to account for between 45 per cent and 55 per cent of the market. Many industrial and service sector companies will issue profits warnings in the coming weeks, because of losses on their shareholdings.

lustre economy, disappointing earnings growth and an end to government intervention does not augur well for the stock market.

Estimates for non-financial groups' earnings range from about 5 per cent growth to a contraction of more than 15 per cent, with the prospect of worse this year.

J.P. Morgan, among the most bullish of the brokers, believes the Nikkei 225 average could be as low as 12,000 by June.

Such a fall would put more pressure on the government to boost the economy through meaningful measures, such as tax cuts, rather than trying to deal with the symptoms of the crisis through market manipulation.

If so, that would be progress.

RWE Performance Profiles

NEWS DIGEST

INDONESIA

Gudang Garam threatened by cigarette price rise

Gudang Garam, Indonesia's largest producer of clove cigarettes, yesterday reported a 38 per cent rise in profits for 1997, but analysts said its sales and margins were likely to come under pressure after minimum prices are doubled from today.

Profits totalled Rp806.8bn (\$107.3m) for the year, compared with Rp555.2bn in 1996, mainly because of a 16 per cent rise in sales to Rp7.518bn. The gross profit margin rose from 23 per cent to 26 per cent.

Schroders, the brokerage, has said that Gudang Garam, the second largest company on the stock exchange, will be hurt more than its competitors by a sharp drop in consumer spending and a government decision to raise cigarette prices from today. The state raised the minimum price of machine-rolled clove-blended cigarettes from Rp95 to Rp175 to boost excise revenues. Indonesia's largest producers pay an excise tax of 35 per cent, and this is expected to be raised in July. Taxes last year amounted to about 50 per cent of gross revenue for the largest producers. *Gander Thomas, Jakarta*

BUILDING PRODUCTS

Carter Holt to sell units to MBO

Carter Holt Harvey, the New Zealand forestry group, plans to sell its Australian building product subsidiaries to a management buy-out backed by investors including AMP, Australia's biggest life group, and Grant Samuel, the merchant bank.

The company, a subsidiary of New York forestry group International Paper, said the profitable subsidiaries were being sold to allow the company to concentrate on its core forestry activities. The price has not been disclosed, but the company described the buy-out as the biggest of its kind made in Australia. The companies being sold have total sales of more than NZ\$240m (US\$135m) and employ 830 staff in New Zealand, Australia and the US. They include insulation and roofing operations in New Zealand, insulation, sinkware and flooring operations in Australia, and roofing companies in the US. The new company will be named Tasman Building Products. *Terry Hall, Wellington*

D-RAM PRODUCTION

Japan groups may quit Europe

Fujitsu and Hitachi, the Japanese groups, said they were considering ending production of dynamic random access memory chips in Europe, where they operate plants in the UK and Germany, respectively.

Hitachi said it was studying halting D-Ram production at its German unit, Hitachi Semiconductor, by about 2000. "This has not officially been decided yet, but we are considering the move," it said. The group will switch from producing D-Rams to making microprocessors and microcontrollers. The unit produces 16MB D-Ram microchips and is planning to shift output to 64MB D-Ram chips in the year to March 1999.

Fujitsu said it might discontinue making 4MB and 16MB microchips at Fujitsu Microelectronics, its UK unit which Fujitsu said produced 2.5m units a month. "We are shifting production gradually to microcontrollers," Fujitsu said. "Eventually we will stop production of these microchips," it added. *AFX-Asia, Tokyo*

TELECOMS

HK group gives up IDD licence

Hongkong Telecom, the territory's dominant carrier, yesterday surrendered its international direct-dial licence, paving the way for the new era of staggered competition.

The group, which is controlled by Cable and Wireless of the UK, agreed to give up its exclusive franchise eight and a half years before its scheduled expiry in return for a package including an HK\$6.7bn (US\$865m) pay-off. It received half of this yesterday. *Louise Lucas, Hong Kong*

PROPERTY

Thai group to double capital

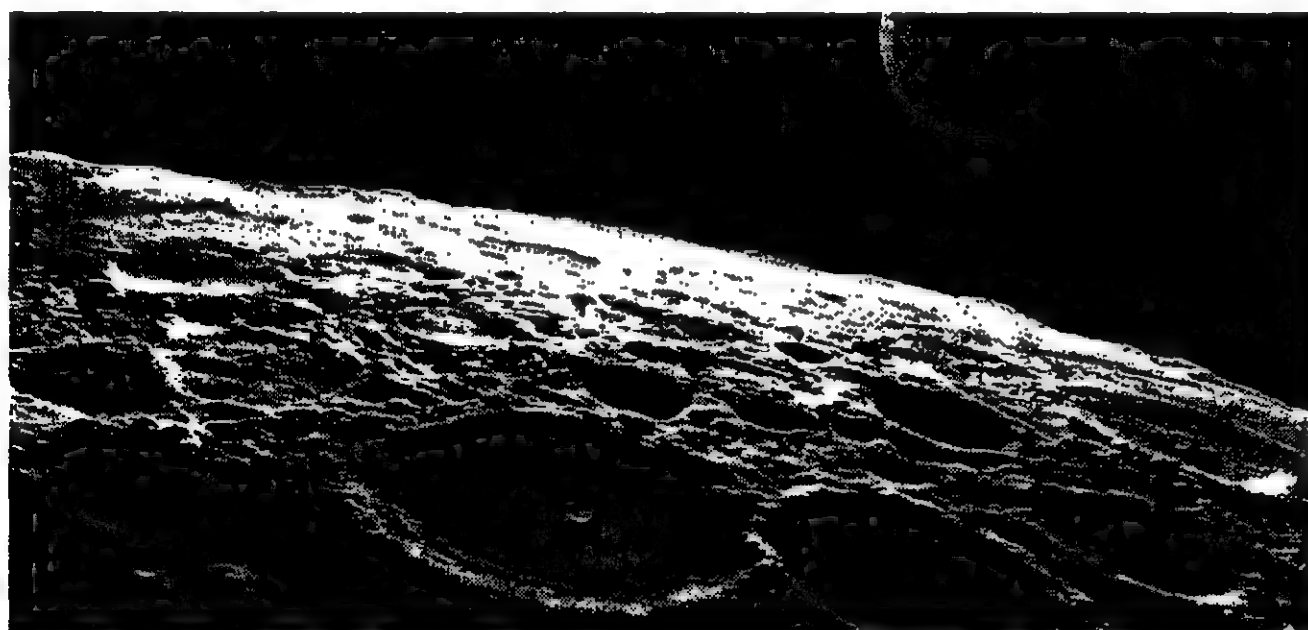
Land & Houses, a big Thai property developer, said yesterday it planned to more than double its registered capital by offering up to 490.8m new shares to institutional investors.

An initial offering of not more than 350m new shares will be made available from the beginning of May, pending shareholder approval. The remainder, which could be placed via a rights issue, will be offered at an unspecified later date. The company will increase the amount of shares available to foreigners from 30 per cent to 45 per cent and will set up a trust fund for foreigners for an additional 10 per cent of outstanding shares.

Proceeds of the capital raising will be used to restructure the company's finances, complete development projects and set up a property fund with other investors.

Land & Houses posted a loss of B\$5.53bn (\$172m) in 1997, compared with a net profit of B\$1.76bn. *Ted Bartolke, Bangkok*

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RESTRUCTURING MORE THAN 100,000 STAFF TO GO OVER MEDIUM TERM AS STATE-OWNED CONCERN MOUNTS EFFICIENCY DRIVE

Bank of China plans to cut workforce by half

By Quentin Peel, James Harding and James Kyage in Beijing

Bank of China, one of the country's big state-owned commercial banks, will shed more than 100,000 employees as it halves its workforce to improve efficiency.

Wang Xuebing, BOC president, said Asia's financial crisis had taught China's banks "the important thing is quality, efficiency and profitability. It does not

matter how big you are." However, Mr Wang cautioned that the reform of China's state banking sector would be a "medium-term" project, suggesting that changing the culture of management and finding new jobs for former bank employees would take time.

Mr Wang said the Bank of China, which employs about 210,000 people, would "have to streamline, downsize our staff. We have to cut half. At

least 50 per cent." He did not give a clear timetable for the restructuring, saying only that "in five years' time the Chinese banks will be able to reduce the labour force because of IT modernisation... but the real question is how to reallocate them [redundant staff]."

Mr Wang indicated the turmoil in Asia had had a profound impact on the thinking of China's senior banking officials and was

likely to have a significant effect on the country's economic and institutional development.

The problems generated by state-controlled banks lending to state-backed industries elsewhere in the region had put in question the model of what he called "the principal banker", whereby one state bank is in effect the exclusive banker to a state-owned enterprise.

"If you look at Japan and Korea, then you can see that if you do not handle this [the relationship between state banks and state companies], there will be concerns about the relationship between the banking sector and industry," he said.

The Asian financial crisis had thrown up new investment opportunities in the region for the Bank of China. "Malaysia, Thailand and Korean investors are now approaching BOC for

funding... and some of the projects are very good ones," Mr Wang said.

At the same time, he suggested that the unravelling of neighbouring economies in Asia would add to the strain on the economy and banking in China.

Many economists consider China's state banking sector to be technically insolvent, but Mr Wang played down the problem of bad debts at Bank of China.

"Our bad debts account for 1 per cent of our loan portfolio in renminbi [the Chinese yuan]. The problem loans [which include overdue interest and capital repayments] at BOC are close to 10 per cent. But bad debts according to Chinese accounting standards are just 1 per cent," he said.

Pre-tax profits at Bank of China slumped 48 per cent in 1997 to Yn6.03bn (\$728m) against Yn11.5bn in 1996.

Docomo reduces parent's forecast

By Masahito Nakamura in Tokyo

NTT Docomo, Japan's dominant cellular phone group, is taking a Y36bn (\$272m) extraordinary loss in relation to its stake in NTT's personal handy-phone system (PHS) companies.

As a result, Docomo cut its parent net profits forecast by Y43bn to Y21bn for the year to March 1998.

The lower net profits - which come on sales of Y1,261bn and pre-tax profits of Y125bn - reflect the extent to which the PHS business is weighing down on the NTT group.

Docomo has a 48 per cent stake in the nine PHS companies in the NTT group, which have cumulative losses of Y340bn.

Docomo's profits revision follows NTT's statement that parent net profits in the year to the end of March would be Y188bn, or 25 per cent lower than previously forecast, because of losses in the PHS units. NTT is taking a special loss of Y67bn in relation to the write-down of its PHS businesses.

PHS, which is a cheaper and more restricted form of mobile communication compared with cellular phones, has faced difficulties since its launch three years ago.

It was initially hailed as a convenient, low-cost alternative to cellular phones, but fierce competition saw handset prices given away free, and a high level of churn has led to mounting losses at most PHS companies.

The decline in cellular phone handset costs and in call rates has also eroded the main advantage of PHS over cellular phones.

PHS subscriptions in January declined by 68,000 overall, according to industry statistics.

The write-offs at NTT and Docomo suggest that NTT is planning to tackle the problems by either merging the companies with Docomo or liquidating the PHS companies and transferring assets to Docomo.

Cost-cutting helps Maruti to 20% advance

By Mark Nicholas in New Delhi

Substantial cost-cutting and improved efficiency lifted pre-tax profits at Maruti, India's biggest carmaker, 30 per cent to Rs9.76bn (\$247m) for the year ended yesterday.

The results, which compared with Rs8.08bn the previous year, were achieved despite a modest rise in car sales of 7.7 per cent.

Maruti, a 50:50 joint venture between the Indian government and Suzuki, the Japanese carmaker, maintained a share of more than 80 per cent of India's passenger car market with unit sales of 326,840 against 303,525 a year earlier, despite

growing competition from newly arrived foreign and joint-venture carmakers.

R. S. S. L. N. Bhaskarudu, the managing director whose appointment last year caused a bitter dispute with Suzuki, refused to comment on the continuing dispute, which is the subject of arbitration proceedings in Paris. Suzuki opposed Mr Bhaskarudu's appointment saying he was "unsuitable" for the post. He would say only that a solution to the dispute lay in the hands of Maruti's owners.

The company's basic 800cc model remained the mainstay of production, with output of 189,000 cars. Falling



Efficiency drive: Maruti maintained its 80 per cent share of India's passenger car market. Tony Andrews

output of its 1,000cc and Esteem models, down almost 25 per cent at 15,700 units, was offset by rising sales of both the 800cc and its Omni minivan, up 21 per cent.

Mr Bhaskarudu said the sustained profits growth, nearly matching the previous year's 22 per cent rise,

resulted largely from cost-cutting at Maruti's Gurgaon plant, outside New Delhi, with savings of at least Rs750m coming from cuts suggested by workers.

Exports, mainly of the Suzuki-branded Alto model, fell to 25,986 cars from 36,000 a year earlier, but Mr Bhas-

karudu said the company aimed to export 10 per cent of production next year. The company said export earnings fell to \$150m from \$140m a year earlier and were exceeded last year by foreign exchange outgoings of \$185m. Turnover was Rs84.5bn, up 6.3 per cent.

FirstGroup and New World in HK bus deal

By Louise Lucas in Hong Kong and Jonathan Ford in London

FirstGroup, the UK's biggest bus company, is joining forces with New World Development, a Hong Kong property company, to take over a five-year franchise to operate a large number of Hong Kong's buses.

The consortium, which will start operating the service on September 1, headed off five other bidders to win the franchise. It defeated the existing holder, China Motor Bus (CMB), which had teamed up with Stagecoach, FirstGroup's biggest rival in the UK, to make a bid.

Hong Kong's bus sector was opened to bidders following the transport authority's decision in February to remove the franchise from CMB after 65 years. Family-owned CMB was criticised for running dirty, old-fashioned vehicles.

Bids were submitted from Hong Kong bluechips and China-backed companies, and the inclusion of a UK partner was taken as confirmation of business as usual for UK companies in the former colony.

"Clearly, we have a level playing field," said Steven Thompson, chief analyst at Nikko Research Centre in Hong Kong. "It does indicate

there's no discrimination."

FirstGroup brings experience to the consortium: New World was one of the few bidders to have no prior experience of operating a bus service. However, it has pledged to recruit CMB personnel - including managers - to provide continuity of service.

For New World, the 88 bus routes will provide recurrent income, in contrast to the more erratic earnings from property development.

The group has made a commitment to invest some HK\$2bn (US\$258m) in the franchise, including the acquisition of 500 new buses within two years, each equipped with a temperature controlled ventilation system and facilities for the disabled. It will also construct a new permanent bus depot.

The new bus operator will require fewer mechanics than CMB but it is prepared to offer alternative employment within the New World group - a factor likely to have been welcomed by the government, under growing pressure as redundancies in the territory increase.

FirstGroup will have a 26 per cent stake in the joint venture and has agreed to contribute up to HK\$500m to the franchise, financed out of existing resources.

Sundiro suspends IPO as markets flag

By James Harding in Shanghai

Hainan Sundiro Motorcycle, one of China's leading motorcycle manufacturers, has postponed indefinitely its planned initial public offering, reflecting the ebbing enthusiasm for new listings on mainland China's lacklustre foreign currency stock markets.

The company's decision to suspend the IPO, which was originally planned for last

year, follows the launch of Dalian Refrigeration last week, which closed below its issue price on its first day of trading.

Ren Chunyu, vice-director of the securities department at Sundiro, said yesterday: "We temporarily postponed the issue of our B shares because of the sluggish market. The price of the newly issued Dalian Refrigeration shares fell and broke their issue price... This may be

attributed to the impact of the south-east Asian financial crisis."

China's stock markets are segregated into A shares, which are denominated in Chinese currency and sold to mainland Chinese investors, and B shares, which are traded in foreign currency and, in theory, reserved for foreign investors.

Sundiro also acknowledged that it was facing "fierce competition and fall-

ing prices" in China. The company, which is based in Haikou on the island of Hainan in southern China, saw motorcycle prices fall by between 10 per cent and 15 per cent last year, according to recent reports.

Bruce Richardson, head of HG Asia in Shanghai, said: "The poor price performance of Dalian Refrigeration, coupled with current difficulties in selling Shanghai Consolidated Electric, indicate con-

tinuing poor conditions for new B share issues. Foreign interest in B shares, new or otherwise, has collapsed."

Dalian Refrigeration had an inauspicious debut on the Shenzhen stock exchange last week, when it offered 115m B shares at an offer price of HK\$2.99 and closed the day at HK\$2.92. Shanghai Consolidated Electric is a window company for a number of Shanghai's electrical joint ventures.

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- Net profit 1997 to ECU 934 million
- Operating income +11% to ECU 904 million
- Operating growth in life insurance
- Operating growth in banking
- Net profit 1997 to ECU 934 million
- Operating income +11% to ECU 904 million
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- Operating growth in banking

COMPANIES & FINANCE: EUROPE

INVESTMENT BANKING GERMAN GROUP IS POACHING STAFF FROM UBS, BZW AND BARCLAYS CAPITAL

Commerzbank recruits top City teams

By Clay Harris, Banking Correspondent

Germany's Commerzbank has swooped into the ferment of the London jobs market, hiring more than two dozen analysts and traders for its growing investment banking operation.

Commerzbank's recruits include highly rated teams from Union Bank of Switzerland, which is merging with Swiss Bank Corporation, and from BZW and Barclays Capital, which were split up in

the bank's retrenchment. It has also hired two derivatives executives who worked for Peregrine, the Hong Kong-based investment bank which collapsed in January.

On the research side, Commerzbank has named heads of utilities, property, autos, insurance, metals and mining, oil and gas, telecoms, chemicals and technology. Several have brought colleagues or teams with them.

The appointments underline the intention of Mehmet Dalman, head of global equi-

ties, to build rather than buy. Mr Dalman was recruited last May from Deutsche Morgan Grenfell.

DMG, meanwhile, has lost another senior executive to Donaldson, Lufkin & Jenrette, the US investment bank which shares Commerzbank's "build not buy" strategy.

John Smith is to become DLJ's international head of research, covering non-US shares. His move keeps intact his partnership with Mark Rutherford, who is

moving from DMG to become head of international equity sales at DLJ.

Both moved to DMG from UBS. Their former UBS boss, Hector Sants, will be global head of equities at DLJ.

At Commerzbank, research recruits are headed by Lakis Athanasiou, who becomes head of utilities. As UK water and utilities analyst at UBS, he was ranked first in the Kretz and Institutional Investor surveys. He brings UBS colleagues Paul Rogers and Chris Rogers.

Martin Bell, head of index trading at BZW, becomes head of derivatives proprietary trading, bringing five former colleagues from Barclays Capital.

Sunil Goonetilleke and Patrick Wong, formerly of Peregrine, will be heads of Asian derivatives sales and Asian equity derivatives trading, respectively.

Laure Pinte, head of risk arbitrage sales, joins from Mesitrow Europe with two colleagues.

Former UBS analysts

named research heads at Commerzbank include John Atkins, property, bringing colleagues Ray Jones and Carl Gough; Peter Dupont, metals and mining; Jeremy Eldon, oil and gas, bringing Lucy Haskins; and Peter Kuan, technology.

Other research heads are Andrew Blair-Smith, autos, from BZW; Michael Drapper, insurance (DMG); Tim Hirst, telecoms (Dresdner Kleinwort Benson); and Ronald Koehler, chemicals (Credit Suisse First Boston).

Bouygues quiet on possible revamp

By David Owen in Paris

Bouygues, the French construction and telecommunications group, yesterday unveiled better-than-expected annual profits, but left unresolved whether Groupe Vincent Bolloré's arrival as a leading shareholder would result in a shake-up of the company's activities.

Speculation over disposals has been rife since late last year, when the holding company of Vincent Bolloré, the French financier, and SCDM, a holding group owned by Martin and Olivier Bouygues, agreed to form a joint company grouping their stakes for at least five years.

The entities involved together own about 25 per cent of Bouygues capital.

Opinion is divided on whether Bouygues will opt to concentrate on traditional strengths, such as construction, or on more recent adjuncts, such as telecoms.

Bouygues Telecom operates France's third mobile phone network.

"I am convinced that Bolloré will demand better shareholder value and, probably, sales," said Jean-Christophe Lefèvre-Moulin, an analyst with Cholet-Dupont in Paris.

Net attributable profits rose from FF644m (\$105.8m) a year earlier to FF756m in 1997, on turnover ahead from FF73.4bn to FF91.1bn.

The group, which also owns 40 per cent of TF1, the TV channel, and helped to build the new Stade de France sports stadium in Paris, said the figures were not comparable, owing to new accounting methods and a change in the way in which one business was consolidated. On a comparable basis, net attributable profit for the year was FF755m, on turnover of FF77.9bn.

The company said its total provisions for risks and depreciation in Asia stood at FF158m. Five countries in the Asia-Pacific region had been affected by the crisis - South Korea, Indonesia, Malaysia, the Philippines and Thailand - and Bouygues derived FF1.2bn in turnover from these in 1997. It expected this figure to fall to FF900m this year.

Construction activity in France continued to decline, but the volume of orders had stopped falling and should be higher this year.

An unchanged gross dividend of FF25.50 is proposed.

Schindler upbeat for 1998 despite Asia

By William Hall in Geneva

Schindler, the world's second biggest manufacturer of elevators and escalators, expects a substantial improvement in its profits in 1998, despite further restructuring charges of up to SF50m (\$33m) and severe pricing pressures in Asia, which accounts for nearly two-thirds of the world elevator market.

The Swiss group, which had previously reported a 61 per cent rise in 1997 net income to SF142.8m, said profit growth in 1998 would come primarily from cost-cutting and improved efficiency rather than revenue growth.

Alfred Schindler, chairman, said the company had achieved its strategic growth target for global presence and the emphasis was being

redirected to strengthening earnings potential. Last year Schindler increased its pre-interest operating margin as a proportion of sales from 2.3 per cent to 3.8 per cent. Its medium-term target is 6.6 per cent.

Mr Schindler, speaking at the company's annual press conference in Geneva, estimated the world market for new installations grew by about 6 per cent to SF15.3bn, or 242,800 units, in 1997.

However, after adjusting for currency fluctuations the total market was flat, as was the estimated SF30bn-a-year global market for repair and maintenance of installed capacity. He did not see any material change in the outlook in the current year.

European demand continued to stagnate but there was a slight increase in Latin America. In Asia-



Alfred Schindler: growing demand in Asia-Pacific but prices 'lousy'

Pacific, demand was growing but prices were "lousy". Schindler estimates 92 per cent of the world market for new installations by value is in the Asia-Pacific region,

followed by Europe with 24 per cent and the Americas with 14 per cent. By contrast, 49 per cent of the group's revenues in escalators and elevators come from

Europe, 30 per cent from the Americas and 21 per cent from Asia Pacific.

Asia, despite its recent problems, would continue to post "substantially higher" long-term growth rates for elevators and escalators than other regions, and it was an area where the group needed to increase its presence, said Mr Schindler. Population growth and urbanisation are fuelling demand for high-rise accommodation.

"The greatest risk lies not in the collapse in demand but rather in a massive expansion of capacity to an extent that vastly exceeds demand and thereby drastically forces prices down."

China is Schindler's most important Asian market, and although volume is growing the arrival of new competitors and "unprecedented price erosion" is neutralising volume growth.

Norske Skog plans Korea buy

By Greg Walker in Stockholm

Norske Skog, Europe's largest newspaper supplier, is pursuing acquisitions in south-east Asia with plans to buy a mill in South Korea from Shin Ho Paper, the Thai forestry group.

The agreement, announced yesterday, to purchase a 90 per cent stake of a plant at Chong Won with annual capacity of 180,000 tonnes, follows the Norwegian company's announcement last week that it was negotiating to buy a majority holding in Shin Ho. The group owns

Thailand's only newspaper mill, which has annual capacity of 130,000 tonnes.

Norske Skog said it would inject about \$35m of new equity into Shin Ho, giving it a 70 per cent stake. The debt-free value of the two transactions would be less than \$300m.

Omund Revhaug, Norske Skog head of corporate development, said it was taking advantage of a more helpful investment climate following the region's economic turmoil.

He said the crisis had improved access to equity

holdings, while currency devaluations had resulted in lower prices.

The acquisitions will raise Norske Skog annual newspaper capacity to 2.3m tonnes and make it a 70 per cent of the third largest supplier of the grade from early next year, behind Canada's Abitibi-Consolidated and Bowater of the US.

Mr Revhaug signalled that Norske Skog was interested in making further acquisitions, with the aim of doubling its annual production capacity in south-east Asia.

Investor, the main

investment vehicle of Sweden's Wallenberg business empire, yesterday said it would distribute up to 60 per cent of Sash, its aerospace subsidiary, to its shareholders ahead of a stock market listing, writes Tim Burt in Stockholm.

The company said shareholders would be offered the shares at an undisclosed discount to the listing price.

The listing would enable the military aircraft manufacturer to "participate better" in the restructuring of the European aerospace industry.

BOE joins financial sector shake-up

By Victor Mallet in Johannesburg

The Cape Town-based Board of Executors group yesterday joined a wave of consolidation in the South African financial services industry with a R17.8bn (\$3.6bn) deal to simplify cross-shareholdings with partners and increase efficiency.

BOE, Orion Selections Holdings, Orion Selections and NBS Boland will be rationalised to form a single investment banking group with a full range of services, including banking, asset management and life assurance.

A restructured BOE would have a market capitalisation of about R51bn, making it the third largest group, behind Standard Bank and Nedcor, in the banking sector of the Johannesburg Stock Exchange.

BOE said that under the new structure, it would have had net earnings of more than R1bn in the year to September 1997.

Liberty Life and Standard Bank revealed three weeks ago that they were in talks to bring their banking, life assurance and fund management operations into a single holding company.

The day before, Anglo American and EMB Holdings announced a merger of their financial services interests.

"It is really a consolidation into one effective group," said Bill McAdam, BOE executive chairman. "It has not been a copy-cat thing. We think it makes huge commercial sense."

He said BOE also wanted to contribute to "black empowerment" by bringing in a significant black South African corporate partner.

"We want to be regarded as an African bank in all respects," he said.

Under the proposed agreements, the listed companies would be BOE Corporation, the holding company, and BOE, the operating unit. The other companies in the group would be delisted from the Johannesburg Stock Exchange.

The restructured group will manage assets of about R77bn, comprising R35bn in banking assets, R22bn in client funds and R10bn of its own investments.

BOE and other South African financial services groups want to be able to meet the challenge of foreign rivals moving into their domestic markets, while developing their own businesses internationally.

Although BOE will have a 30 per cent stake in RMBL, Mr McAdam said he regarded the holding as a strategic investment and saw no serious conflict of interest.

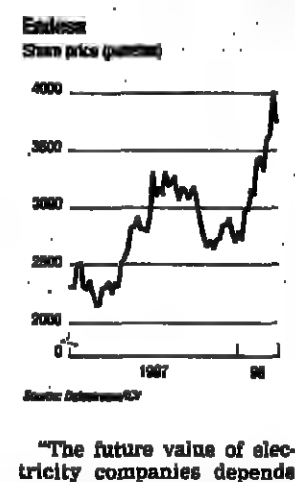
Endesa seeks gas partnership

By Tom Ivers in Madrid

Endesa, the big Spanish power group scheduled for further privatisation, said yesterday it was seeking a strategic partnership with a gas conglomerate to diversify its business and ensure its leadership in domestic electricity generation.

The utility will also continue to expand in Latin America, step up investment in telecommunications and shed more than one-quarter of its labour force over the next four years to overcome falling income caused by tariff cuts and electricity deregulation in Spain.

The Spanish government controls 41 per cent of Endesa, and is expected to sell 25 per cent stake in June through a market disposal likely to be worth more than Ptas800bn (\$5.1bn), a record issue for Spain.



"The future value of electricity companies depends on their ability to establish long-term arrangements with gas companies that will ensure supplies at a good price and make possible a joint selling strategy to big industrial consumers," said Rafael Miranda, Endesa

chief executive.

He added that Endesa had initiated contacts with possible partners, including Gas Natural, the dominant Spanish gas distributor, the Anglo-Dutch Shell group and Total and Elf Aquitaine of France.

Endesa has provisionally allocated Ptas300m for electricity generation and distribution investments in Latin America over the next four years - up to Ptas400bn could be spent this year.

The group, in association with Enersis, the Chilean electricity company in which Endesa bought a controlling stake last year, is considering acquisitions in Brazil and in Mexico.

But Mr Miranda said the cost of electricity assets in Brazil, "risks becoming exorbitant" and Endesa was not in the market for "buying at any price".

BHV chief aims to lift profits 10% this year

By Andrew Fisher in Munich

Bayerische Hypo- und Vereinsbank (BHV), the German bank being created by the merger of two Bavarian banks, should be able to increase operating profits by at least 10 per cent this year, Albrecht Schmidt, chairman designate, said.

Both existing banks - Bayerische Vereinsbank and Bayerische Hypothek- und Wechselbank - had raised profits in the first two months. Net interest income and commission income, benefiting from strong private customer business, had both moved ahead, he said.

But Mr Schmidt, currently chairman of Vereinsbank, also said 1998 would be a "particularly difficult year". The two banks would have to ensure the exertions of the merger - which will not be completed until September - did not lead to any loss of business.

The merged bank, which will be Germany's second

largest, aims to achieve a 15 per cent net return on capital and a cost/income ratio of 50 per cent in 2003. Mr Schmidt said these were realistic goals. "The good start to 1998 confirms our optimism."

Last year, the banks achieved combined operating profits of DM3.4bn (\$1.8bn), a rise of 21 per cent. Vereinsbank accounted for 60 per cent. Joint net profits were 9 per cent higher at DM1.7bn, with a return on equity of 5.4 per cent. The cost/income ratio was 58.4 per cent.

The profit rises came after Vereinsbank made extra provisions for Asian loan risks amounting to 20 per cent of its exposure of DM1.1bn in the problem countries. Hypo-Bank nearly doubled its loan risk provisions to DM2.85bn to cover risks on large property projects, using gains on its securities portfolio.

The banks also gave more details of the merger terms. The auditors' report on

which the merger exchange ratio of roughly 1.3 Hypo-Bank shares to one of Vereinsbank was calculated valued Vereinsbank at DM137.23 a share and Hypo-Bank at DM103.18. Vereinsbank's total valuation was DM41.4bn against DM27.9bn for Hypo-Bank.

Mr Schmidt gave no clear idea of how BHV would realise its planned synergies and cost cuts. He has said it would shed jobs in Germany but create jobs across Europe. Yesterday, he said the employment total would "oscillate" around 40,000 - the present combined figure - but "at the lower end".

BHV plans to operate as a "bank of the regions" in retail and corporate banking, property finance, asset management, financial markets and trade and project finance.

The merger, which is dependent on shareholders' approval at annual meetings in May, will be retrospective to January 1.

Fincantieri falls 79% on delays to production

By Paul Renda in Milan

Fincantieri, the Italian state-owned shipbuilding group, yesterday reported a 79 per cent fall in 1997 profits after production difficulties in meeting its heavy workload commitments, especially in the thriving market for large cruise ships.

The group, scheduled for privatisation, has been involved in an increasingly tense relationship with the Walt Disney company over the construction of two 85,000-tonne, 2,800-passenger cruise ships for the US entertainment conglomerate.

The order marks the entry of the US company into the cruise business. However, production difficulties at Fincantieri's Marghera yard in Venice forced Disney to delay the launch of its cruise holidays from April to July.

The delays have led to considerable friction between the Italian shipbuilders and Disney, which is understood to have a team of about 150 people in Venice monitoring progress on the two cruise liners.

Fincantieri yesterday acknowledged that its lower 1997 earnings reflected the problems with the Disney orders, which are expected to entail penalty clauses for late delivery.

Earnings fell from L50.3bn in 1996 to L10.7bn (\$5.8m) for 1997, while revenues increased 12 per cent to L3.95bn.

Fincantieri has cornered about 40 per cent of the world market for giant cruise ships, receiving orders last year from P&O, Carnival, and Holland America Line.

It is also a leader in the world market for fast ferries.

NEWS DIGEST

DAIRY PRODUCTS

Dispute among investors poses threat to MDFI

The future of MD Foods International (MDFI), the Danish company which owns one of the largest dairy businesses in the UK, was in doubt yesterday following disagreements among investors over a planned financial restructuring. A meeting of shareholders today is due to vote on the plans, which were outlined last month by MD Foods, the Danish dairy farmers' co-operative which has a 51 per cent stake in MDFI.

The reconstruction would in effect buy out the four Danish banks and other institutional investors which own the remaining 49 per cent.

Niels Hougaard, fund manager at Kommunernes Pensionsforbund, a pension fund with shares in MDFI, said yesterday: "We cannot vote for the reconstruction." He added that if the fund or other shareholders did not support the reconstruction, receivership would be imminent, but added: "We are still negotiating. Things could look very different by tomorrow."

The reconstruction plan would transfer MDFI's activities to MD Foods, which would place them under a wholly-owned subsidiary. MDFI would be left with only its debts of about DK2.5bn, of which some DK1.5bn is owed to four big Danish banks.

Hilary Barnes, Copenhagen and John Willman, London

ITALY

Sell-offs lift IRI

IRI, the Italian state holding company due to be dismantled through a series of privatisations during the next three years, yesterday reported a 1997 profit of L5,000bn (\$2.74bn) following substantial capital gains from the privatisation of Telecom Italia, the Seat telephone directories company, and Banca di Roma. The company, which reported a meagre profit of L184bn in 1996, said its net financial indebtedness had dropped sharply to L2,700bn from L9,400bn in 1996.

IRI said it intended to pursue its privatisation programme this year with the sales of the Autostrade motorway group, the Aeroporti di Roma airport operator, the Ferrovie shipping line, the Alitalia airline, the Finmeccanica defence and engineering group and the Fincantieri shipbuilding company. It expected to report another significant profit this year along with further improvement in its indebtedness.

Pirelli, the Italian tyre and cables group, yesterday shelved its proposed L1,400bn acquisition of Sirti, the telecommunications network services and engineering company controlled by Telecom Italia. The collapse of the deal follows a dispute between Pirelli and Telecom Italia over the value of Sirti after the recently privatised Italian telecommunications group decided to review a L2,200bn fibre optic programme. Paul Betts, Milan

ITALIAN BANKING

BNL tumbles into the red

Banca Nazionale del Lavoro, the Rome-based commercial bank to be privatised later this year, yesterday reported a consolidated loss of L2,803bn (\$1.54bn) for 1997, compared with a L181bn profit in 1996.

The loss reflects the bank's decision to clean up its balance sheet by making sweeping provisions and write-downs on its non-performing loans ahead of privatisation.

It is planning to merge with Banco di Napoli and is anxious to attract other banking allies to form one of the country's largest banking groups at a time of rapid consolidation in the industry. BNL said the bank had performed satisfactorily in 1997 with gross group operating income rising by 10 per cent to L2,315bn. Paul Betts

BELGIUM

One-off gains boost GBL

One-off gains boosted 1997 profits at Groupe Bruxelles Lambert, Belgium's second-biggest holding company, controlled by the financier Baron Albert Frère, from BF16.9bn to BF81.73bn (\$633m). Gains included BF15.44bn on the group's sale of its stake in Banque Bruxelles Lambert to ING of the Netherlands, and BF4.79bn on the sale by its subsidiary Audiofina of a 16.7 per cent share in CLT-Ufa, Europe's largest commercial broadcaster, to Germany's Bertelsmann. Underlying net profits increased 14.7 per cent from BF6.06bn to BF7.64bn. Neil Buckley, Brussels

OIL AND GAS

Wintershall chief confident

Wintershall, the oil and gas subsidiary of the German chemicals group BASF, said yesterday it expected profits to hold firm in 1998 despite the recent fall in oil prices. Herbert Detharding, chairman, said earnings this year were expected to be in line with those in 1997, when the group's consolidated pre-tax profits increased 26 per cent to DM1bn. Net sales - turnover less oil and gas taxes, which are passed on to the government - rose 21.9 per cent to DM6.7bn (\$3.63bn). Wintershall passed on DM529m in post-tax earnings to BASF.

In 1997 output of oil rose 7 per cent to 7.8bn tonnes. Wintershall said it intended to step up exploration and production this year. In 1997 it spent DM198m on exploration, up from DM115 in 1996. Frederick Bödemann, Berlin

FOOD PROCESSING

Eridania shares jump

Shares in Eridania Béghin-Say, the French foods group, rose more than 5 per cent yesterday on the announcement of a 14.7 per cent jump in 1997 profits to FF1.4bn (\$307m) from FF1.18bn. The group, controlled 50.4 per cent by Montedison, the Italian conglomerate, also forecast 1998 results would be better because of good harvests, improvements in the US sweeteners market and expansion in eastern Europe.

A 6 per cent rise in the dividend to FF35 from FF33 per share is proposed. During the year, turnover increased 15.8 per cent to FF63.85bn from FF54.97bn, helped by strong growth from French sugar operations. Sugar and its derivatives accounted for 21 per cent of turnover but generated 41 per cent of operating income, which rose from FF12.75bn to FF13.97bn.

Net debt edged up to FF15.49bn from FF14.08bn, largely due to demands of stock financing. It is proposed to simplify the holding structure, merging Eridania Béghin-Say with its wholly-owned subsidiary European Sugars France, leaving Montedison's controlling stake unaltered. Robert Graham, Paris

ISRAEL

Bank Leumi doubles net

Bank Leumi, Israel's second largest banking group, yesterday said net profits more than doubled last year, due to one-off income from the sale of non-financial subsidiaries.

Net profits jumped from Shk604m in 1996 to Shk1.28bn (\$331m) in 1997, excluding one-off income and expenses in both years. Including the one-off items, net profit climbed 22 per cent from Shk633m to Shk810m. Return on equity, excluding the disposals, increased from 8 per cent to 10 per cent over the same period.

Income from financing activities before provisions for doubtful debt climbed 11 per cent Shk3.52bn in 1996 to Shk3.92bn last year. However, provisions for doubtful debts rose from Shk633m to Shk726m. Avi Mechile, Tel Aviv

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COMPUTER MERGER DETAILS OF REDUNDANCIES TO BE MADE PUBLIC IN SEC FILING

Digital chief expects to quit new group

By Paul Taylor in Boston

Robert Palmer, Digital Equipment chief executive, has indicated that he is unlikely to remain with the computer group after the proposed merger with Compaq Computer is completed.

Mr Palmer, who joined Digital in 1985, said he had yet to discuss his future with Eckhard Pfeiffer, Compaq chief executive. "Certainly I have said we should sit down to discuss the issue," he said. "You do not need

two chief executive officers and I certainly would not accept a 'make-work' role." There has been growing speculation about what Mr Palmer, who became chief executive in 1992, might do after the merger, which will create a powerful third force in the full-service enterprise computing market, alongside IBM and Hewlett-Packard.

Analysts have suggested that Mr Palmer, an industry veteran and accomplished semiconductor engineer who co-founded Mostek in 1969, might retire after the

merger. The deal is subject to shareholder and Federal Trade Commission approval but is expected to be completed by June.

However, Mr Palmer suggested he had other ambitions. "I am still relatively young," he said.

He said it was "too early to speculate" about redundancies among Digital's 54,000 workforce and that detailed plans would be made public when the two companies filed their proxy statement with the US Securities and Exchange Com-

mission, expected in the next few weeks.

He said there was "relatively little" overlap between the two companies' products, although he accepted there would have to be a "rationalisation" of some operations - particularly the engineering, sales and services operations. "Customers do not want three salesmen [one each from Compaq, Tandem and Digital] in the lobby," he said. Other senior Digital executives acknowledged that there would also be job losses among head

office staff.

"Compaq has demonstrated greater manufacturing efficiency and higher sales per employee while Digital is known for its architecture and engineering excellence," Mr Palmer said.

He has said the merged company would be headquartered in Houston, and that it would carry the Compaq name.

However, he expressed confidence that Digital's core technologies would survive and noted that Mr Pfeiffer has publicly stated his

commitment to Digital's Alpha microprocessor technology and its 64-bit Unix and Open VMS operating systems. He said he expected Alpha to continue to provide a high performance platform for the merged group's customers.

Mr Palmer said he remained "very optimistic" about the acquisition by Compaq, although he acknowledged that few mergers in the high-tech industry succeed. "Very few combinations make as much sense as this one," he said.

GMM taps bond markets

By Henry Tricks in Mexico City

Grupo Minero México, Mexico's biggest mining company, yesterday completed the largest Latin American private-sector bond offering since the Asian crisis, despite a slump in world copper prices.

ING Barings, sole lead manager for the transaction, said GMM issued \$500m guaranteed senior notes, \$375m with a 10-year maturity and \$125m at 30 years.

The 30-year tranche was unprecedented for a Mexican private-sector issuer, said Leonel Nares, ING Barings' head of debt capital markets in Latin America. He said \$430m of the debt would be used by Grupo Mexico, GMM's parent company, to pay for the purchase of a privatised Mexican railway.

The Pacifico-Norte railway has been hit by a labour dispute since the Grupo Mexico concession opened in February. Grupo Mexico's partner in the railway, Union Pacific of the US, has also been plagued by delivery problems across the US-Mexican border.

The bond offering comes

at a time of soft world copper prices that have halted several investment projects in mines in Latin America. Copper and zinc accounted for some 80 per cent of GMM's \$1.3bn sales in 1997.

Industry analysts said the bond's success could indicate that pessimism about Latin American mining had peaked after the price collapse, especially for companies such as GMM, which have low costs.

The bond was rated above Mexico's sovereign ceiling by Moody's Investors Service, the US rating agency, partly because of GMM's financial strength and also because of guarantees that cushion foreign exchange risk, such as the payment of dollar export receivables into an offshore account that will be made available in the event of currency restrictions.

Moody's said GMM was partly sheltered from the drop in copper demand in the wake of the Asian crisis because of its strong cash position and improving grades of copper deposits. Also only 3 per cent of its sales are to Asia.

Scios up on new heart drug hopes

By Victoria Griffith in Boston

Shares in Scios surged yesterday after the biotechnology group released clinical results for a new acute congestive heart failure treatment and said it would be filing for approval with the Food & Drug Administration within 30 days.

The company's stock was up 6.5 per cent to \$12 1/2 at noon.

Richard Casey, chief executive of the California-based company, predicted that global sales of the product would reach nearly \$2bn annually. However, David Stone, a biotechnology analyst at Cowen & Co, put the drug's potential at half that figure. "There's no question that Scios' product is effective, but to really understand how much it will sell we need to see head-to-head studies that show how it

compares to existing treatments," said Mr Stone.

The new treatment is the recombinant version of a naturally occurring hormone that is part of the body's normal response to a heart attack. The hormone, known as "BNP" was discovered in pigs in 1988 and isolated in humans the following year.

BNP works by relaxing blood vessels, boosting fluid excretion and increasing sodium retention. Heart failure affects 4.9m Americans a year. Scios' drug is aimed at the 1m of those patients who go to hospital.

Scios said it planned to announce a global marketing agreement with a large pharmaceutical company for the new drug within the next few weeks.

Even before this week's announcement, Scios' share price had quadrupled since last May.

Columbia to absorb TriStar

By Michiko Nakamoto in Tokyo and Allen Rutherford in London

TriStar Pictures, one of the best-known Hollywood brand names, is to disappear following the decision of Sony Pictures to fold the studio into its larger Columbia Pictures subsidiary.

John Calley, the former film producer and MGM executive who took charge of Sony Pictures as president and chief operating officer last year, said that pooling production through two studios had led to inefficiency and internal rivalry.

The future of TriStar, which was formed 16 years ago by a joint venture between Columbia Pictures, CBS Television and Home Box Office, has been in doubt ever since Sony, the Japanese electronics group, acquired it and Columbia Pictures in 1989.

TriStar has had a series of box office successes, including the recent hits *As Good As It Gets*

and *My Best Friend's Wedding*, but it has not carved out an independent identity from the 74-year-old Columbia.

Sony executives stressed in Tokyo yesterday that the decision to fold TriStar into Columbia had been taken by Mr Calley's team in Los Angeles, and did not stem from corporate headquarters in Japan.

However, the Japanese parent company has taken a more hands-on approach towards Sony Pictures since Nobuyuki Idei's appointment as group president. By the time he took the top job, Sony had poured huge amounts of capital into its film subsidiary and written down \$3.8bn on its investment.

Mr Idei, a cosmopolitan manager who had worked extensively outside Japan, quickly made his mark with the removal of Mickey Schulhof, who had led Sony into Hollywood as head of its US



Jack Nicholson in the TriStar success 'As Good As It Gets'

interests. After installing his own executive team at Sony's US operations in 1996, Mr Idei indicated Tokyo would be taking a more activist approach.

This change of strategy was highlighted by the abrupt departure earlier this year of Jeffrey Sagansky, co-president of the film and

television company. He cited intervention from the Japanese parent company as the main reason for his leaving.

Recently, Sony Pictures has become a star contributor to group profits. *Godzilla*, another TriStar picture, is tipped to be one of the highest-grossing films of this summer.

Wall St feels the chill blowing in from Asia

By Richard Waters and John Lahart in New York

The long surge in corporate earnings that has underpinned Wall Street's 1990s bull market is far from over. However, after six years of tremendous advances, the rate of growth in corporate profits is about to slow markedly - a new and potentially troubling experience for a stock market accustomed to double-digit earnings gains every year.

The quarter which ended yesterday will, by general consent, result in the weakest year-on-year earnings gains since the mild recession of the early 1990s. IBES, which measures the forecasts of Wall Street analysts, puts expected growth in earnings per share for companies in the Standard & Poor's 500 index at 1.1 per cent. First Call projects 0.7 per cent.

This would be the most anaemic rate of growth in six years. And it reflects a marked shift in sentiment on Wall Street over the past two months. Earlier hopes that earnings would rise by as much as 10 per cent on average have vanished, blown away by the strength of the dollar and the cold economic wind from Asia. "We've had a lot of very favourable trends that have presided for a very long time," says Dick Hoey, investment manager at Dreyfus, a mutual fund concern. "It's getting to be a more challenging environment."

Two of the strongest factors behind the earnings boom have been the collapse in US corporate tax and interest rates. Analysts such as Martin Barnes at Bank Credit Analyst have pointed out for some time that these represent only a one-off boost to profits.

The slow down in corporate profits

(left) and the S&P 500 earnings

(right) are shown in the charts below.

Source: IBES Department of Commerce, Bureau of Labor Statistics, Standard & Poor's

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Echlin warns of effect on customers of SPX merger

By Richard Tomkins in New York

Echlin, the US car parts maker fighting an unwanted \$3bn bid from SPX, strongly defended its independence yesterday, warning that a merger with SPX would be "extremely destructive" to customer relations.

It said its outlook was bright as an independent company, and profits were running ahead of expectations. Earnings per share should reach \$2.40-\$2.50 in the financial year ending August 31, compared with analysts' forecasts of \$2.28.

The growth was expected to continue as the company's repositioning programme moved into its second phase, Echlin said. Earnings per share were expected to be \$3.65-\$3.80 in the next financial year, and \$4.40-\$4.55 in the year after that.

Last week, Echlin lost a legal battle to delay shareholder consideration of SPX's approach. It had hoped to delay a meeting

until December to allow more time for its financial turnaround to show through, but now faces a vote by June 25.

Yesterday, Larry McCurdy, chairman and chief executive, told a meeting of analysts and investors in New York that Echlin would continue to evaluate SPX's proposal, even though there was no formal offer on the table.

Nevertheless, Mr McCurdy said, the Echlin board was "extremely concerned about the lack of a business logic" of an Echlin-SPX combination, and about the effects it would have on shareholders, customers, employees, suppliers and others.

"It appears that there are very few synergies between Echlin's operations and SPX's, and that the resultant cost savings of a combination would be considerably less than those SPX currently estimates," Mr McCurdy said.

"Moreover, SPX does not appear to understand Echlin's business, and a combi-

nation of our two companies, along the lines SPX spelled out in its new distribution concept, would be extremely destructive to our long-term relationship with customers."

Mr McCurdy said "solid historical precedent" demonstrated that a sizeable loss of business occurred "when an industry player naively attempts to reinvent the established channels of distribution".

He declined to comment on the opportunities it was examining.

John Clapper, New York

Losses at CME widen to \$85.1m

By Kevin Done, East Europe Correspondent

Net losses at Central European Media Enterprises, the US pioneer of private commercial television in central and east Europe, almost tripled in 1997, from \$30m a year earlier to \$85.1m.

The company, which has operations in seven countries, made operating losses of \$40.8m against a profit of \$10m last time.

CME was hit by the heavy cost of launching new TV stations last autumn in Poland and in Hungary as well as by higher expenses for more locally produced programming in most of its markets.

There was also a charge of \$27.4m against its abortive foray into the German regional TV market.

CME disclosed it had withdrawn altogether from the German TV market at the end of last year. It has transferred its equity interest in stations in Nuremberg, Leipzig and Dresden for a nominal amount to Dietmar Straube, formerly the group's managing director in the country.

The CME board, led by Ronald Lander, one of the heirs to the Estée Lauder cosmetics fortune and the majority CME shareholder, has been reshuffled.

At the end of last week CME replaced Leonard Fertig, chief executive, with Michel Delloye, formerly head of CLT, the international media group, in an attempt to improve the profitability of the group's existing operations and slow its hectic expansion in new markets.

The CME share price on the Nasdaq stock market rose sharply from \$22.25 to \$29 in the week before the management changes and results were announced.

Last year the group increased consolidated net turnover by 14 per cent to \$155.4m, helped by the expansion of its operations in Romania and Slovenia.

Combined net turnover of CME's related TV operations, including those in which it has minority voting interests, rose 43 per cent to \$205m.

CME said that in the fourth quarter last year all five stations launched between 1994 and 1996 in the Czech Republic, Romania, Slovenia, Slovakia and Ukraine achieved positive earnings before interest, tax, depreciation and amortisation, and had a positive broadcast cash flow.

In Poland and Hungary, TVN and TV3 had negative broadcast cash flows of \$28.6m and \$9.9m respectively.

NEWS DIGEST

ENTERTAINMENT

Universal may open European theme park

Universal Studios, the US film and television group owned by Seagram, the Canadian drinks company, is considering opening a theme park in Europe in the next phase of its international expansion, it disclosed yesterday. Edgar Bronfman, chief executive of Seagram, said the company was "looking at a number of opportunities" in Europe. It is already planning to open a Universal Studios theme park in Osaka, Japan, in three years' time.

Mr Bronfman told a Variety/Schroders Big Picture entertainment conference in New York that Seagram regarded expansion of theme parks as an important part of its effort to create a stronger brand from Universal. He said Universal's theme park brand was intended to be "a little edgier, a bit more thrilling and more exhilarating" than that of Disney.

He declined to comment on the opportunities it was examining.

John Clapper, New York

INVESTMENT BANKING

Rosenfeld quits Lazard Frères

Gerard Rosenfeld, head of investment banking at Lazard Frères, the Wall Street investment bank, has left the firm to run a new private equity fund at NationsBank Montgomery Securities.

He will be a senior managing director of the firm. His departure follows the resignation 10 days ago of Kendrick Wilson, who headed Lazard's financial institutions group.

Mr Wilson left to become a partner at Goldman Sachs.

COMPANIES AND FINANCE: UK

Eridania Béghin-Say

Significant rise of overall group results

The Board of Directors of Eridania Béghin-Say met on March 30th 1998 under the Chairmanship of Mr Stefano Meloni. Consolidated accounts for the full year ended 31st December 1997 were reviewed and approved.

The key consolidated figures are as follows:

In French franc millions	1995	1996	1997	Δ 97/96
Net sales	50,806	54,978	63,650	+15.8%
Operating income	4,001	3,762	3,978	+6.0%
Pre-tax income from continuing operations	2,973	2,767	2,838	+3.0%
Net income - Group share	1,526	1,660	1,904	+14.7%
Total shareholders' equity	19,024	20,019	20,960	
Net financial indebtedness	13,010	14,087	15,496	

■ The principal changes in the scope of consolidation were brought about by acquisitions in the Crushing and Refining division (Austria and Poland) and in the Animal Nutrition division (Spain, South Africa and Brazil). They were also the consequence of the full year consolidation in 1997 of the former Compagnie Française de Sucrerie and of Moyreia (Crushing and Refining in Spain) as well as of the disposal of Sodas (synthetic alcohol in France) as of June 30th 1997.

■ The 15.8% increase in sales was largely attributable to strong internal growth of the French Sugar, Crushing and Refining, Animal Nutrition and Consumer Products businesses, to changes in the scope of consolidation and, to a lesser extent, foreign currency (US and Canadian dollar, pound sterling and Italian lire) translation impact. Sales growth on the basis of unchanged scope of consolidation and exchange rates was 6.5%.

■ The net impact of foreign currency translation on operating income having been insignificant, the 6% increase was attributable to both the changes in the scope of consolidation and to the good performance of most businesses: French sugar, European Starch and Derivatives, European Crushing and Refining, Animal Nutrition and Consumer Products. These improvements more than made up for the lower results of the Italian sugar and North American isoglucose businesses.

■ The Group's share of net income rose 14.7% to 1,904 million French francs. In addition to the improved operating income, factors contributing to this increase included the non-recurring capital gains and the impact of continued rationalisation efforts on the group's tax rate.

■ Net financial indebtedness rose from 14,087 million francs at December 31st 1996 to 15,496 million at December 31st 1997 as a consequence of the combination of foreign exchange translation, increased working capital needs (linked to higher levels of inventory) and net additions to the scope of consolidation.

■ The ratio of net financial debt to equity was 0.74 at year end 1997 versus 0.70 one year earlier.

The Board also reviewed the accounts of the parent company, Eridania Béghin-Say SA, showing net income of 1,516 million French francs versus 969 million French francs in 1996.

The Board will propose to the AGM that a dividend of 308.4 million French francs be paid, up 6.1% from the previous year. The dividend per share and per investment certificate would thus be 35 French francs (versus 33 for the previous year) before tax credit.

The Board decided to submit resolutions on the two points detailed hereafter, at an "Assemblée Générale Extraordinaire" to be held immediately prior to the "Assemblée Générale Ordinaire" set for May 14th 1998.

■ Eridania Béghin-Say stock option plan: The 3-year plan provides that the group's senior managers will be granted options to purchase up to a total of 200,000 Eridania Béghin-Say shares. The price at which these options could be exercised will not be at a discount to the stock market price prevailing at the time the options are granted.

■ Merger of European Sugars France into Eridania Béghin-Say: European Sugars France (100% owned by Montedison) has as its only asset shares representing 50.2% of the total shares issued by Eridania Béghin-Say. It has no debt, or any other liabilities.

After the merger, the objective of which is to simplify the ownership structure of Eridania Béghin-Say, this shareholding will be directly held by Montedison. Total shareholding of Eridania Béghin-Say held by the Montedison group will therefore remain unchanged at 50.43%.

Regarding the current period, the good prospects set out earlier this year have been confirmed: the quality of the 1997/98 agricultural crops, the good performance of the group's main activities, the gradual improvement of the competitive situation in the American isoglucose market, the continued development in Central and Eastern Europe and the reduction in financial indebtedness are all factors which enable us to feel confident that 1998 will bring yet further progress in the Group's results.

MONTEDISON GROUP

Chiroscience shares jump on Zeneca deal

By Daniel Green

Chiroscience, the UK biotechnology company, yesterday announced that Zeneca, the pharmaceutical company, would market its anaesthetic Chirocaine, prompting a 23 per cent jump in its share price.

Both companies said the deal should bring in £200m in revenues for Chiroscience, but John Padfield, Chiroscience's chief executive, said this figure was deliberately conservative.

As part of the deal, Zeneca, the UK's third largest pharmaceutical company, will pay £15m for 3.17 per cent of the company in newly issued shares. That investment values the shares at 425p each, against yesterday's closing price of 333p.

The deal has been long expected by analysts, and the share price rise confirms Chiroscience's position as one of the UK's top three biotechnology companies by market value behind British Biotech and Shire Pharmaceuticals.

Chiroscience floated in 1992 at 150p. The drug is likely to be launched in its first European markets this year. Chiroscience plans to submit it for US regulatory approval this month (April), with the launch there likely next year.

The deal is the latest in a series by Chiroscience. Last month it signed a collabora-

tion agreement with US company Bristol-Myers Squibb, and last year signed a similar contract with US drug company Schering-Plough. Chirocaine is a long acting local anaesthetic that is a purified version of an old drug bupivacaine (sold under the trade name Marcaine).

Bupivacaine is a mixture of two molecules that are chemically identical but physically are mirror images of each other. Doses of bupivacaine are limited by side-effects that are associated with one of the mirror images and have been linked with 90 deaths since the drug was launched in the 1970s.

Chirocaine is the other mirror image, so Zeneca and Chiroscience believe it will both replace bupivacaine and allow new uses that have so far been prevented through fear of side-effects.

Bupivacaine's patents have expired, but those protecting Chirocaine last until 2014.

Chiroscience spent only £25m developing the drug, about one tenth the figure for most new medicines, largely because the drug is a purer version of bupivacaine. It is likely to be used mostly in surgery and in pain relief during childbirth.

Zeneca is a logical partner for Chiroscience in that it is already marketing anaesthetics.

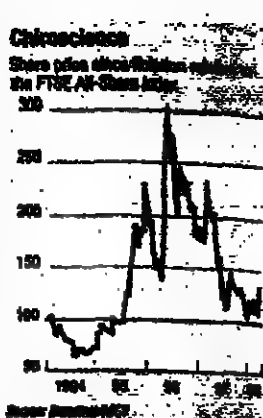
COMMENT

Chiroscience

Chiroscience's licensing deal for its anaesthetic relieves some of the pain biotech shareholders have felt over the past year. But it is a measure of investor scepticism that biotech shares (all together but rise alone. Yesterday's agreement with Zeneca should, however, make Chiroscience less vulnerable to the next attack of market nerves. Endorsement from a pharmaceutical heavyweight provides independent validation of the company's research. This is invaluable in a sector that measures progress by medical trials rather than profits.

Using Zeneca's marketing muscle to sell Chiroscience's anaesthetic also makes perfect sense. Not only does Zeneca have more people but it can package the anaesthetic with other drugs when making a pitch to cash-strapped hospitals. The pressure will be on others in the sector, such as British Biotech, to step up licensing activity. True, this is not a panacea for all drug development. But with investor confidence still shaky, a tie-up with a reputable pharmaceutical company eases pressures on cash flow without having to top shareholders. Moreover, if yesterday's deal is any indication, the biotech companies are extracting improved royalty terms from the drugs giants. These need strong drug pipelines and biotech companies have the innovative culture to deliver them.

Chiroscience's share price after the deal with Zeneca



Source: Chiroscience

Computecenter For those nervous of outsourcing, here comes its less threatening cousin: "out-tasking". Computecenter, the information technology services group planning a May flotation, distributes new computer kit to companies and then helps them use it. It may not sound as glamorous as consultancy, but it still offers considerable opportunities for growth.

Any concerns are to do with the shape of the market as it affects Computecenter's suppliers and customers. One risk is that the IT manufacturers decide to bypass middlemen like Computecenter and sell direct to the customer. Fortunately for Computecenter, there are no signs of this happening yet. Another concern is that a number of its biggest customers, such as banks, are consolidating. In the short term, this is a boost, as mergers produce IT confusion. Longer term, though, fewer traders means fewer computer screens, and less need for Computecenter.

Computecenter's share price after the deal with Zeneca

Source: Computecenter

Computecenter's share price after the deal with Zeneca

Source: Computecenter

Bluebird clause causes bid row

By Andrew Edgecliffe-Johnson and David Blackburn

Guinness Peat Group has protested to the Takeover Panel and Stock Exchange about the decision by Mettel to change a key contract with Bluebird Toys.

The investment group and the world's largest toy maker have made competing bids for Bluebird, the company behind Polly Pocket.

Blake Nixon, an executive director of Guinness Peat,

said: "We are pushing for the dissemination of information. You cannot draw conclusions when you only have half the facts."

The takeover panel said last night it was "completely comfortable" that Bluebird's board had not breached rule 21 of the takeover code by collaborating with Mettel in any "frustrating activity".

A clause in Bluebird's eight-year-old distribution contract with Mettel allows the US group to take control

of the manufacture of Polly Pocket toys and to restrict Bluebird's margins in other markets.

One analyst described the revelation of the clause on Monday as "pretty scandalous". It is a very material contract in terms of Bluebird's worth and shareholders had no idea it was in place.

A large shareholder complained that there was not a single mention of the clause in Bluebird's defence docu-

ment. "This is a disgrace."

However another observer, while admitting a significant impact on Bluebird's profits, described the contract as "in the normal course of trading". He added that Mettel had driven a hard bargain, hence Bluebird's grudging recommendation of its \$40m (\$70m) offer.

The Takeover Panel's ultimate decision would be to nullify the Mettel bid. That would leave shareholders 10p per share worse off.

Metromail accepts GUS bid

By Peggy Hottelinger

Great Universal Stores yesterday appeared to have won the battle for Metromail, the Illinois database marketing company which was the subject of rival bids from the UK's mail order house and American Business Information of Omaha.

Metromail's board said it was recommending GUS's

bid of \$34.50 a share, valuing it at \$910m including debt. ABI had failed to meet the Monday noon deadline to write off the substantial goodwill on acquisition through the profit and loss account. GUS will now call on agreements with Metromail's largest shareholder, RR Donnelly, and management which entitle it to buy 51 per cent of the company.

on the final day of its 1998 financial year. Had the deal been delayed until today, it would have been forced to write off the substantial goodwill on acquisition through the profit and loss account. GUS will now call on agreements with Metromail's largest shareholder, RR Donnelly, and management which entitle it to buy 51 per cent of the company.

ABI refused to surrender and said it was appealing against a court decision last week to reject its request for an injunction to block the GUS deal. The two companies had originally agreed a takeover deal at \$31.50 a share which ABI alleged was against the interests of Metromail's shareholders by acting as an obstacle to a fair auction process.

RESULTS

		Turnover (£m)	Pre-tax profit (£m)	EPS (p)	Current dividend payment (p)	Date of payment	Dividends corresponding dividend	Total for year	Total last year
AB	18 mths to Jan 01	17.77	(15.5)	1.18	(1.44)	4p	(5.1)	2.25	8
Aggreko	Yr to Jan 31	35.5	30.5	8.38	(3.54)	18.04p	(15.81)	5.89	9
Accretive	Yr to Dec 31	16.3	(13.8)	1.11	(1.11)	11.24	(7.89)	0.772	May 18
Arcore Waterford	Yr to Jan 31	3.70	(2.35)	117.84p	(56.3)	40.94p	(14.1)	2.85	June 3
China Comares	Yr to Dec 31	42.4	(33.7)	3.83	(3.72)	3.8	(4.5)	1.25	June 25
Chia	Yr to Dec 31	98.4	(77.3)	9.52	(4.92)	8.11p	(3.23)	2.08	May 29
Gen	Yr to Dec 31	0.016	(0.009)	4.88	(2.81)	7.25	(-)	-	-
Coramell Parker	6 mths to Jan 31	45.8	(45.2)	2.31	(7.59)	1.3	May 2	-	8
Dean Corp	Yr to Dec 31	31.7	(14.5)	1.59	(0.93)	2.02p	(1.68)	0.4	May 20
Delectum Ltd	Yr to Dec 31	30.3	(42.1)	1.71	(1.19)	1.66	(1.21)	1.25	June 5
Druid	6 mths to Dec 31	14.3	(9.38)	2.4	(1.8)	6.92	(4.51)	1.45	Apr 29
Escent	Yr to Dec 31	14.3	(1.13)	0.21	(10.4)	1.33p	(1.13)	1.33p	-
French	Yr to Dec 9	25.5	(16.3)	0.013	(0.27)	2.01p	(1.44)	0.5	July 10
Hepworth	Yr to Dec 31	648.5	(777.8)	117.1	(67.6)	8p	(16.5)	5	June 1
Highland Ltd	6 mths to Feb 28	112.7	(110.1)	35.1	(24.9)	12.5	(12.5)	2.2	June 1
Highgate Life	Yr to Dec 31	83.7	(73.6)	7.16	(8.35)	4.71	(7)	0.8	June 1
IBS	6 mths to Dec 31	3.29	(2.37)	0.228	(0.47)	1.81p	(4.5)	0.2	May 8
Intercepta Tech	6 mths to Dec 31	5.78	(3.06)	0.437	(0.44)	1.1	(1.1)	0.2	May 8
Jacobs	Yr to Dec 31	46.1	(2.7)	2.97	(3.01)	2.3	(3.4)	1.75	May 20
Landis	Yr to Dec 31	95.1	(122)	7.49	(8.64)	20.01	(20.55)	9.15	July 1
Luxcell	Yr to Jan 31	4.881	(4.50)	31.6	(27.5)	14.7	(-)	2.25	July 1
Management Oil & Gas	Yr to Dec 31	89	(82.6)	15.6	(12.6)	2.3	(1.76)	0.3	May 18
Moatfield Estates	Yr to Dec 31	10.6	(8)	2.03	(0.69)	1.12	(0.2)	0.25	0.25
Other	Yr to Jan 31	72.4	(69.7)	2.21	(3.12)	8.73p	(12.32)	0.25	0.25
Orford Holdings	Yr to Dec 31	15.5	(6.78)	0.255	(1.85)	0.21	(3.3)	0.05	0.05
PGA European Tour	Yr to Dec 31	8.36	(4.06)	1.22	(2.77)	1.7	(1.4)	0.05	0.05
Pittman	Yr to Dec 31	12.2	(15)	10.8	(1.7)	18.51p	(1.7)	0.05	0.05
Prema	6 mths to Jan 31	58.2	(56.1)	4.49	(2.92)	5.19p	(4.7)	1.21	May 22
PS	53 wks to Jan 31	59.5	(59.2)	0.28	(0.148)	0.07	(0.39)	0.05	0.05
Quadrant	6 mths to Nov 30	15.2	(25.9)	0.328	(0.87)	6.2L	(38.5)	0.05	0.05
Radiance	Yr to Dec 31	14.2	(16.5)	1.37	(1.25)	6.5	(4.5)	2	July 3
Radiance Brothers	Yr to Dec 31	50.5	(35.8)	10.84	(9.51)	24.55p	(24.87)	0	May 15
Rogley	Yr to Dec 31	188.3	(211.5)	6.51	(1.21)	5.8	(0.3)	4.24	May 29
Rugby	Yr to Dec 31	1.065	(1.198)	88.14	(83.3)	7.4	(5.4)	2.35	May 29
Rugby (Ald)	Yr to Dec 31	42.8	(38.9)	2.2	(2.8)	6.82	(8.31)	1.8	May 29
Sava	Yr to Dec 31	420.6	(428.7)	7.32	(10.4)	9.7	(12.9)	3.5	July 1
Silver Shield	6 mths to Nov 30	3.3	(1.46)	0.197	(0.051)	0.13L	(0.04)	0.05	0.05
Stewart	Yr to Dec 31	2.571	(2.584)	150.29	(201.1)	9.8	(12.6)	2.7	June 30
United Assurance	Yr to Dec 31	-	(-)	226.74	(548.9)	40.2	(151.3)	14	June 1

	Mar (p)	Attributable earnings (£m)	EPS (p)	Current dividend (p)	Date of payment	Dividends corresponding dividend	Total for year	Total last year
Investment Trusts								
Investment Trusts	46.39	(71.47)	0.274	(0.383)	0.27L	(0.38L)	-	0.27
London St Lawrence	238.08	(205.57)	1.12	(0.889)	3.43	(2.71)	3.15	May 22
Rediffusion	132.78	(128.84)	0.211	(0.215)	2.45	(2.5)	2.33	June 30
St David's	45.2	(29.9)	0.291	(0.111)	3.58	(1.35)	2.23	June 30
Schroder SpA	157.85	(118.1)	4.72	(4.92)	8.36	(8.16)	2.3	June 30
Second St David's	-	(-)	0.139	(0.201)	-	-	2	Apr 30

Earnings shown basic. Dividends shown net. Figures in brackets are for corresponding period. £ Irish currency. *After adjustment for scrip issue. †After exceptional charge. ‡After exceptional credit. ‡On increased capital. ‡Comparatives for nine months. ‡Ann stock. ‡Comparatives for 57 weeks. ‡Foreign income dividend. ‡Includes FD element. *Comparatives restated. ‡First interim for 1998. ‡At August 31. ‡Saturday paid.

Nafin Finance Trust II
U.S. \$129,880,000
Floating Rate Notes due 1999
For the Interest Period 31st March, 1998 to 30th June, 1998 the Notes will carry a Rate of Interest of 6.25% per annum. The Coupon Amount per original U.S. \$100,000 Note will be U.S. \$6.25 payable on 30th June, 1998.

The Republic of Venezuela
U.S. \$1,870,000,000
Fixed Rate Notes due 2007
USD Interest Reduction Bonds A
In accordance with the provisions of the Republic of Venezuela, the Republic of Venezuela is hereby offering for sale to investors a new issue of Fixed Rate Notes due 2007. The Notes will carry a Rate of Interest of 6.25% per annum. The Coupon Amount per original U.S. \$100,000 Note will be U.S. \$6.25 payable on 30th June, 1998.

Re: RTH International Finance Inc.
New: FTL 129,000,000 - FTL due 1998
Notice is hereby given that from 11 March 1998 to 30 June 1998 (91 days), the Notes will carry an interest rate of 5.00% per annum. Interest payable on 30 June 1998 will amount to FTL 63,352. per FTL 5,000,000. - Note and on FTL 633,534. per FTL 50,000,000. - Note.

Agencia Bank: Société Comptable de Banque, Société Anonyme

LEHMAN BROTHERS

is pleased to announce the following advancements to Managing Director:

Simon K. Adamiyatt	Marco C. Figus	Philip Lynch
Anul C. Bajpai	Lee C. Gatewood	Andrew J. Morton
Laurence M. Band	Michael P. Guarnieri	Despak M. Narula
Steven D. Berkley	Timothy N. Hartzell	Michael J. Odrich
Rob A. Bloemker	Christopher R. Hemmway	Nicolas Pourclet
Thomas R. Bolland	Perry C. Hoffmeister	Catherine D. Rice
Robert B. Burke	Nicholas P. Howard	Ernest H. Ruehl, Jr.
Joseph R. Campbell, Jr.	Todd C. Jom	Sanjiv Sobti
Charles A. Cortese	Tarun Jotwani	Alan A. Sparks
Michael De Mollerat du Jeu	Michael J. Konigsberg	Mark J. Stevenson
Kerim R. Derhalli	Michael J. Kreidler	Francois R. Teissonniere
Martin W. Dolan	Antoinette E. La Belle	Kenneth L. Telljohann
Jeffrey S. Dorman	Brian L. Libman	Phua K. Young
Andrew A. Ellner	Kurt A. Locher	

April 1998

LEHMAN BROTHERS

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FIDELITY SPECIAL GROWTH FUND

Société d'Investissement à Capital Variable
Kansallis Houze - Place de l'Etoile
B.P. 2174, L-1021 Luxembourg
R.C. Luxembourg B 20095

DIVIDEND NOTICE

At the Annual General Meeting of Shareholders held on March 26, 1998, it has been decided to pay a dividend of US\$ 0.05 per share on or after April 6, 1998 to shareholders of record on March 27, 1998 and to holders of bearer shares upon presentation of coupon no.12.

Paying Agent: KREDIETBANK S.A. LUXEMBOURGEOISE
43, Boulevard Royal
L-2449 Luxembourg

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Computacenter to be valued at up to £900m

growth in light truck sales in North America should support growth in braking systems, and French automotive markets were picking up. Aerospace markets remained robust, but aftermarket sales were seeing mixed conditions.

The shares put on 3½p to 241½p. Merrill Lynch expects pre-tax profits of £366m this year, putting the shares on 14 times earnings.

Philip Hulme, chairman, said the flotation would give liquidity to institutions and employees who already hold shares. He said that the existing management would retain a significant equity stake.

The shares will be marketed to institutional investors in the UK and internationally. Goldman Sachs is

Analysts said a valuation up to £900m seemed fair - and predicted that the shares would take off on flotation. "It's a real premium for quality IT stocks in the UK," said one.

Industry analyst Richard Howlay said: "I reckon that within seconds of the float being opened, the shares will be valued at over £100."

Monument plans cash call two years after buy-back

to see if PC World works in smaller stores and then you will see a downsizing out of town," said one. "There is a lot of evidence to suggest the PC World sites have got too big."

The measures represent the most radical steps yet taken by a trust manager to try and reduce the discount between share prices and the value of the underlying assets.

Fleming has also decided to target private investors, in open preference to institutions.

NOTICE OF REDEMPTION

To the Holders of
Wells Fargo & Company
Floating Rate Subordinated
Capital Notes due 1998
(the "Notes")

NOTICE IS HEREBY GIVEN that all of the outstanding Notes will be paid in cash at maturity on July 7, 1998 (the "Redemption Date") out of Dedicated Proceeds, as such term is defined in the Indenture identified below. Such date is subject to acceleration as provided in Section 12.02 of the Indenture. Dedicated Proceeds in the aggregate amount of U.S.\$200 millions will be paid to redeem the Notes in full. Upon presentation of any such Note on or after the Redemption Date, the holder thereof shall receive in cash the principal amount thereof. Interest on the Notes accrued to the Redemption Date will be paid to holders of Notes in bearer form upon presentation and surrender of the related interest coupons and to those persons in whose names the Notes are registered at the close of business immediately prior to the fifteenth day next preceding the Redemption Date. Interest on the Notes will cease to accrue after the Redemption Date. The Notes are being redeemed pursuant to the provisions of the Indenture dated as of August 1, 1986 between Wells Fargo & Company and Morgan Guaranty Trust Company of New York, as Trustee. Payment of the Redemption Price will be made at any of the offices of the paying agents set forth below upon presentation and surrender of the Notes.

Under the provisions of the Internal Revenue Code, both principal and interest payments on securities held by U.S. persons may be subject to backup withholding of 31% of such payments if such holders have not certified their taxpayer identification numbers on Form W-9. U.S. persons who wish to avoid backup withholding should submit a completed and signed Form W-9 when presenting securities for payment.

Trustee and Principal Paying Agent
Morgan Guaranty Trust Company of New York
60 Victoria Embankment
London EC4A 3DP

Paying Agents

Morgan Guaranty Trust Company of New York Avenue des Arts, 35 B-1040 Brussels Belgium	Swiss Bank Corporation Paradeplatz 6 Zürich CH-8010 Switzerland
Morgan Guaranty Trust Company of New York 14 Place Vendôme Paris 75001 France	Kreditbank S.A. Luxembourgoise 43 Boulevard Royal L-1255 Luxembourg

Morgan Guaranty Trust Company of New York
Bayerstrasse 2-4
60313 Frankfurt

Wells Fargo & Company
By: **Morgan Guaranty Trust Company of New York**
as Trustee

Dated: April 1, 1998

LEADERSHIP IN ADVISORY IN LATIN AMERICA

December 1997

Bridas
Bridas Corp. has merged its South American oil and gas business with the South American oil and gas business of Amoco

PanAmerican Energy Ltd.

The undersigned acted as financial advisor to Bridas Corp. in the transaction
Chase Securities Inc.

October 1997

BUNGE
Bunge International Limited has acquired a controlling interest in Ceval Alimentos S.A.

The undersigned acted as financial advisor to Bunge International
Chase Securities Inc.

May 1997

INVESTVALE

U.S.\$3,134,700,000*
Acquisition of a 5.1% interest in Companhia Vale do Rio Doce

The undersigned acted as financial advisor to Investvale
Chase Securities Inc.

November 1997

Aguas Tratadas de Madero, S.A. de C.V.
Construction and Long-Term Project Financing of a 154 lps Industrial Wastewater Treatment Plant for the Francisco I. Madero Pemex Refinement Refinery in Ciudad Madero, Tamaulipas, Mexico.

Financiera y Leasing
Chase Securities Inc.

September 1997

BOGOTANA DE AGUAS Y SANEAMIENTO
SUEZ LYONNAISE DES EAUX - DESINCHIEN S.P.A.

U.S.\$100,000,000
Senior Secured Notes due 2010

U.S.\$30,000,000
Series A Notes

U.S.\$70,000,000
Series B Notes

The undersigned acted as financial advisor and arranged the placement of the Notes.
Chase Securities Inc.

June 1997

CMS Ensenada S.A.
U.S.\$75,000,000
Construction and Term Financing provided by the Overseas Private Investment Corporation for a 128 MW/220 ton steam per hour cogeneration facility at YPF's La Plata Refinery in Buenos Aires Province, Argentina.

OPIG

Chase Securities Inc. acted as Financial Advisor to CMS Ensenada in the development, structuring and financing of this project in La Plata, Argentina.

Sponsored by **SEMP Ensenada** a SPS Ensenada Company

Financial Advisor
Chase Securities Inc.

December 1997

Sadia Concordia SA Industria e Comercio
Sadia Concordia SA Industria e Comercio has sold its non-integrated Soybean Operations to Archer Daniels Midland of Brazil Ltda.

U.S.\$165,000,000

The undersigned acted as financial advisor to Sadia Concordia
Chase Securities Inc.

June 1997

TMM
Transportacion Maritima Mexicana
Joint venture with Kansas City Southern Industries in their acquisition of Mexico's Northeast Railroad

U.S.\$1,400,000,000

The undersigned advised Transportacion Maritima Mexicana in its acquisition and had with KCS for the Mexican Northeast Railroad
Chase Securities Inc.

November 1997

Petroquim S.A.
Project Financing for the construction of a 100,000 ton pe Polypropylene Project in Chile

U.S.\$110,000,000
Project Debt Facilities

The undersigned acted as Project Advisor and arranged the financing
Chase Securities Inc.

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Triple whammy continues to hurt yen

MARKETS REPORT

By Simon Kuper

The yen fell again yesterday, squeezed between the end of the Japanese fiscal year and today's start of Tokyo's Big Bang of financial deregulation. To the surprise of many traders, the Bank of Japan did nothing to boost its currency.

The yen has dropped Y45 against the dollar since Friday, because the market believes that from today Tokyo's desire to defend the currency will diminish. Officials had been keen to raise the Nikkei stock average to 18,100 at the fiscal year-end. That would have helped fragile Japanese banks, which put the value of their shareholdings on their balance sheets. The officials thought that to boost the stock market they had to boost the yen, because the two tend to move in tandem. For weeks the market was

therefore reluctant to sell the currency.

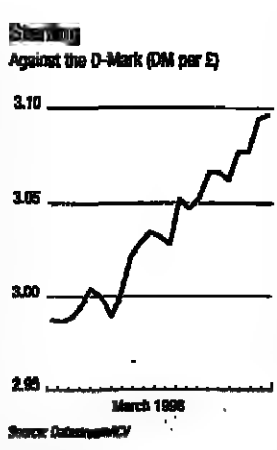
The fiscal year ended yesterday with a 1.6 per cent rally in the Nikkei stock average to 16,527. But that was still more than 1800 points below its close at the end of last fiscal year, which means that banks' balance sheets have taken another blow. Now the government seems to have no immediate need to stimulate the stock market. Nick Parsons, currency strategist at Paribas Capital Markets in London, said: "People are asking themselves, 'Who is the buyer of the Nikkei index on April 1?' He forecast that the yen and the stock market would fall in tandem.

Many investors believe the Big Bang will also weaken

the yen, by enabling Japanese investors to place more money abroad. Completing the triple whammy for the stricken currency, most forecasters said the Bank of Japan's quarterly *tankan* survey of industry on Thursday would show a disastrous reading.

The yen dropped Y13 against the dollar yesterday to close in London at Y134.40. Its next support level is at Y134.40, but its low for 1998 and its lowest point since the dollar began recovering in early 1995.

The dollar and pound also continued to rise against the D-Mark, with not a word of protest from the Bundesbank. The pound jumped to DM3.11, its record high against the D-Mark since July 1995. It dropped 0.3 pence higher on the day at DM3.097. Mr Parsons noted that UK companies had been among the main buyers of the pound in



recent trading sessions. Having watched the strong currency eat into their export earnings for 20 months, many were finally hedging against a further rise in sterling, spurred on by market talk that the pound could reach DM5.00 soon.

The dollar slipped 0.4 pence against the D-Mark to DM1.849, and rose from SF1.518 to SF1.525 against

the Swiss franc.

Later yesterday, the Federal Reserve's open market committee was still meeting to set the level of US interest rates.

The Norwegian krone dropped back with the oil price. The Czech National Bank bought hundreds of millions of D-Marks to halt the rise in its koruna.

"Sterling is amazing," says Carl Weinberg, chief economist at High Frequency Economics in New York. He is not the first to voice the thought, but he is bold in forecasting that the currency will decline as early as next week. The

money market is pricing in one more UK rate rise at most, with the increase to occur in the next three months. Next Thursday, the Bank of England ends its two-day monetary policy committee meeting. If it raises interest rates then, says Mr Weinberg, many investors will assume that the Bank does not raise, then investors will assume that the chances of a rate rise have shrunk, and they will also sell the pound. "I think sterling may be very near its peak," says Mr Weinberg.

Gordon Brown, the UK chancellor, seems to have no better idea than anyone else whether that is true. Asked by the Treasury select committee yesterday about the pound's strength, Mr Brown merely said the Bank of England was independent and had to meet the government's inflation target.

POUND SPOT FORWARD AGAINST THE POUND

Month	Spot	1m	3m	6m	12m	18m	24m	36m	48m	60m
Jan	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Feb	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Mar	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Apr	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
May	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Jun	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Jul	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Aug	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Sep	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Oct	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Nov	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Dec	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250

DOLLAR SPOT FORWARD AGAINST THE DOLLAR

Month	Spot	1m	3m	6m	12m	18m	24m	36m	48m	60m
Jan	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Feb	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Mar	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Apr	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
May	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Jun	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Jul	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Aug	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Sep	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Oct	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Nov	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Dec	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250

CROSS RATES AND DERIVATIVES

EXCHANGE CROSS RATES

Month	Spot	1m	3m	6m	12m	18m	24m	36m	48m	60m
Jan	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Feb	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Mar	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Apr	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
May	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Jun	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Jul	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Aug	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Sep	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Oct	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Nov	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Dec	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250

UK INTEREST RATES

LONDON MONEY RATES

Month	Spot	1m	3m	6m	12m	18m	24m	36m	48m	60m
Jan	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Feb	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Mar	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Apr	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
May	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Jun	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Jul	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Aug	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Sep	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Oct	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Nov	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Dec	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250

EMS EUROPEAN CURRENCY UNIT RATES

Month	Spot	1m	3m	6m	12m	18m	24m	36m	48m	60m
Jan	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Feb	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Mar	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Apr	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
May	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Jun	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Jul	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Aug	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Sep	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Oct	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Nov	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Dec	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250

BASE LENDING RATES

Month	Spot	1m	3m	6m	12m	18m	24m	36m	48m	60m
Jan	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Feb	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Mar	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Apr	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
May	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Jun	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Jul	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Aug	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Sep	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Oct	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Nov	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250
Dec	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250	1.5250

ANNUAL GENERAL MEETING OF SWEDISH MATCH AB (publ)

Shareholders of Swedish Match AB are summoned herewith to the Annual General Meeting in Stockholm, the Globe Arena Annex (accessible through entry gate 4) on Wednesday, April 29, 1998 at 4.30 p.m.

AGENDA

1. Election of Chairman of the Meeting.
2. Election of one or two minutes chairpersons who, in addition to the Chairman, shall verify the minutes.
3. Presentation and approval of the list of shareholders entitled to vote at the Meeting.
4. Determination of whether the Meeting has been duly convened.
5. The President's speech.
6. Presentation of the annual report and the auditors' report and the consolidated financial statements and the auditors' report on the consolidated financial statements for 1997.
7. Adoption of the income statement and the balance sheet and the consolidated income statement and the consolidated balance sheet.
8. Disposition to be made of the Company's profits as shown in the balance sheet adopted by the Meeting.
9. The discharge of the Board of Directors and of the President from liability for the fiscal year.
10. Determination of the number of Board members and deputy members to be elected by the Meeting.
11. Determination of the number of auditors and deputy auditors.
12. Determination of the fee to be paid to the Board of Directors and auditors.
13. Election of Board members and deputy members.
14. Election of the auditors and deputy auditors.
15. Election of members of the Nominating Committee.
16. Question concerning the share redemption and the authorization of the Board to approve a new share issue.

The Nominating Committee elected at the Annual General Meeting 1997 proposes the following with regard to items 10-14 on the Agenda:

Item 10: 6 ordinary members and no deputy members.

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COMMODITIES & AGRICULTURE

Oil traders give thumbs-down to Opec deal

MARKETS REPORT

By Gary Mead and Kenneth Gooding

The market gave an initial thumbs-down to the crude oil output cut agreed yesterday by members of the Organisation of Petroleum Exporting Countries and other oil producers.

May-dated Brent crude on the International Petroleum Exchange had slipped to low of \$14.28 by midday in

London, down 56 cents from Monday's close, although it recovered to \$14.44 in later trading.

Analysts said the sceptical response to the Vienna pact was underpinned not so much by doubts over the will of oil producers to cut output by a planned 1.5m b/d (equivalent to 2 per cent of total global production), as a belief that the proposed cut would be insufficient to rebalance the global crude oil market.

"We don't really know if it will be enough, nor how quickly the producers will respond if it proves not to be enough," said one specialist. Oil prices collapsed by 40 per cent between last October and mid-March.

The international oil markets will remain in significant over-supply for the next six months, according to several analysts. Some are forecasting that world oil stocks will continue building this quarter at an above-average

rate of 2m b/d, which would further depress prices.

However, Ali al-Naimi, Saudi Arabia's oil minister, who attended the Vienna meeting, said the pact "should judge the Opec decision in two months".

Venezuela, another important participant in the agreement, also sounded an optimistic note. Erwin Arieta, energy minister, said the country would cut production further if that proved necessary to stabilise prices.

Coffee futures again flourished on the London International Financial Futures Exchange, the May contract closing \$21 higher at \$1.841 a tonne, boosted by strong buying from investment funds.

There was also strong interest in cocoa, with the May contract finishing \$18 higher at \$1,070 a tonne, in a day of relatively heavy volume, with 15,700 lots.

Traders said the buying was again led by industrial

users rather than investment funds, and there were no fundamental developments to propel the market higher.

On the London Metal Exchange tin rose by 1.3 per cent, or \$75 a tonne, to close at \$5,835 after another fall in LME stocks sent investment funds scrambling to cover short positions.

Nick Moore, analyst at Flemings Global Mining Group, pointed out that LME tin stocks were at their low-

est since November 1993. Tin's price then, during the last bull market for tin, was \$7,183. It peaked at \$10,733 a tonne the following April, by which time LME stocks were virtually gone.

Since the beginning of this year the exchange's tin stocks have fallen by more than 40 per cent and buyers are having to pay a premium for immediate delivery. Yesterday the premium was \$27 a tonne compared with tin for delivery in three months.

USDA forecasts switch to soybeans

By Gary Mead

US grain traders responded positively to the 1998 planting forecasts published by the US Department of Agriculture yesterday, viewing them as neutral to bullish for futures prices.

Spring wheat sowings are expected to be the lowest for a decade and, at 16.3m acres, 16 per cent down from 1997. The low plantings reflect farmers' moves towards more profitable crops. The seeded area for winter wheat this year is 46.4m acres, per cent less than in 1997.

Corn (maize) plantings of all types will increase by 1 per cent, to 80.8m acres; this would be the largest planted acreage since 1985. However, expected acreage is down in most corn belt states, as farmers plan to switch to soybeans.

On the Chicago Board of Trade the May contract for corn opened down 43 cents, at \$2.63 a bushel, on news of bigger than expected US corn stocks, which are now 10 per cent higher than a year ago at 4.87bn bushels, while wheat stocks are up a massive 42 per cent, at 1.16bn bushels, outstripping analysts' forecasts.

Soybean stocks are also higher than a year ago, up 14 per cent at 1.25bn bushels. Soybean farmers intend to plant 2 per cent more this year, a record of 72m acres.

Soybean plantings have jumped since passage of the 1996 Farm Bill, which substantially reduced the federal government's influence over plantings.

Plantings of durum wheat are likely to be the highest since 1982: the 4.08m acres will mark a 35 per cent increase over 1997. Cotton for the third successive year, to 13.3m acres. This is 4 per cent lower than last year and 10 per cent below 1996.

Zimbabwe tobacco down 42%

By Tony Hawkins in Harare

Tobacco farmers were shocked when Zimbabwe's auction opened yesterday, with prices down 42 per cent on last year.

While the industry had anticipated lower prices than in 1997, when sales on the first day averaged 208 US cents a kg, there was widespread tearing of tickets (reflections of sales) by growers when prices on one of the three floors averaged only 123.6 cents and on another 116.3 cents.

Prices on the first day are seldom a reliable guide to seasonal trends, but so drastic a decline points to price levels well below those anticipated in the industry of close to 300 cents.

The norm is for prices to firm gradually as the sales gain momentum and as better quality leaf comes to the floors, peaking in August or September.

Last year, the average for the season of 280 cents a kg was 13 per cent above the price for the first day. In 1996, prices opened at more than 240 cents, firming to an average 285 cents for the season.

If these patterns are repeated, prices will average less than 160 cents, down more than a third on 1997.

Lennard Shelf miners know how to take the heat

Extracting lead and zinc in Kimberley is not for the faint-hearted, says Kenneth Gooding

Smoke can be seen from two bush fires from the entrance to the underground mine in the blistering sunshine of the Western Australian desert. One blaze threatens the mine's camp, recently completed at a cost of A\$8m (US\$3.3bn).

This is one of the remotest areas in Australia, the southern Kimberley region, about 500km east of the coastal town of Broome. There is no question of calling a fire brigade for help.

Richard Jordinson, general manager of this complex of four lead-zinc mines called the Lennard Shelf Operations, and responsible for the 280 employees, decides to take a closer look.

Near the camp the flames are fierce and about three metres high, fanned by a slight breeze and moving forward rapidly.

Mr Jordinson explains that a fire in the wet season is unusual, but the grass is tall and highly combustible because of the natural oils it contains.

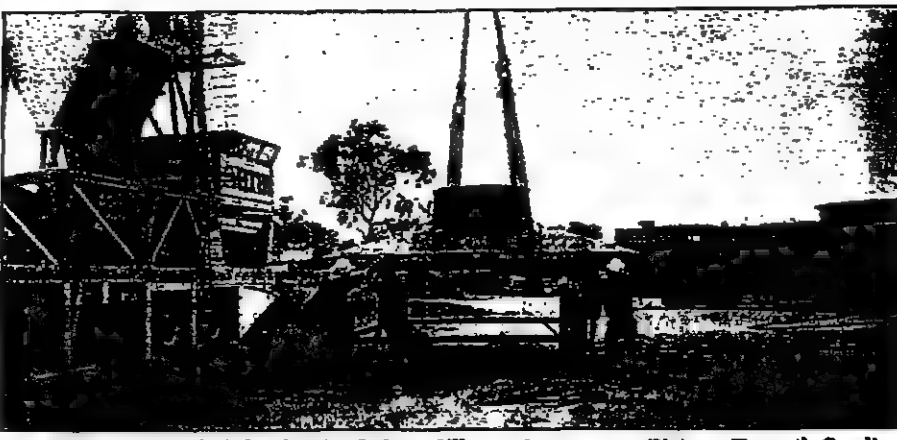
The air is filled with thou-

sands of crickets, jumping and flying to safety. Above the flames several kites are manoeuvring, hoping to spot a tasty snack running from the fire. We keep a watchful eye for snakes - some of the world's deadliest are found in this region - and for kangaroos, big lizards that head for the nearest high point when in danger and have been known to claw their way up a startled person.

A grader has been commandeered to use its scoop to scrape away grass and bush to create a fire break around the camp fence. Some flames jump this gap and are now within 30 metres of the camp.

Mr Jordinson inspects the camp's other defences. The road on which we have been driving provides some protection. The grader is still at work, this time making the fire breaks near the camp buildings twice as wide.

There is another streak of lightning in the distance, similar to those that started the bush fires. But the flames have begun to sub-



Installing equipment at the stand-alone Pillara mine

Picture: Kenneth Gooding

sides. They have consumed the grass and shrub over a huge area and there is nothing else for them to feed on. Mr Jordinson has maintained his equanimity throughout this episode. We drive to his office 20 minutes away, near Kapok, another underground mine on the Lennard Shelf complex.

The fire has not been his only frustration today. To start with it is Monday. He returned after a weekend at his home in Broome for another five days at the mining complex, working at least a 6am to 6pm shift each day.

He will not see his wife and four sons again until late Friday.

This Monday has been hot, 41 degrees, with 96 per cent humidity. This is not unusual. Exploration stops between November and

April because of the heat and the wet. Mr Jordinson arrived to find the power plant out of action. Also, a rock has stuck at the Kapok underground mine, temporarily halting ore processing.

"You can't run this place from Melbourne or Perth," he says. "The only way you are going to make money on these deposits is by managing them here on a day-by-day, hour-by-hour basis. They have to be managed very carefully, handled with great care."

Mr Jordinson is implying that most big mining companies would find it virtually impossible to operate the Lennard Shelf complex.

Zinc and lead mining in the area started in the late 1980s at the old Cadjet underground mine. This had so much metal in the ore that it would have been diff-

cult to mine at a loss. Cadjet was owned by Broken Hill Proprietary, Australia's biggest resources group, and Shell Australia. They were ready to wind down operations in 1994, when Cadjet had about 18 months life left.

However, two BHP executives, Rod Webster and Alan Castleman, convinced there was more to be discovered in the area, persuaded them to sell. Castleman and Webster raised A\$30m to buy the Lennard Shelf Operations for their company, Western Metals.

In the past three and a half years, Western has built two new mines, Goongewah and Kapok, to provide feed for the Cadjet treatment plant; is developing the stand-alone Pillara mine, which will start up in July, and has built a new export

facility at the port of Derby. The company raised A\$75m through a rights issue in January, is debt-free and been paying modest dividends.

When Pillara is fully operational, Western Metals' zinc output will rise from 65,000 tonnes to 168,000 tonnes, making it the world's seventh largest zinc producer. Mr Jordinson insists it won't be easy to crank up production. "Cadjet was very high-grade and the ore was close to the surface. Kapok is deep and hot and Pillara is big, but much lower grade."

But he has no doubt it will be done, as long as there are people like himself, ready to put up with the sometimes harsh conditions that problems - such as unexpected bush fires - can be dealt with just as quickly as they arise.

COMMODITIES PRICES

BASE METALS

LONDON METAL EXCHANGE

(Prices from 10.00am to 10.30am)

IN ALUMINIUM, 100 TONNES (5 per cent)

Close 1427.50

Previous 1427.50

High/Low 1427.50-1427.50

AM Official 1427.50

Narrow close 1427.50

Open bid 251.50

Total daily turnover 47,400

IN ALUMINIUM ALLOY (5 per cent)

Close 1273.75

Previous 1273.75

High/Low 1273.75-1273.75

AM Official 1273.75

Narrow close 1273.75

Open bid 5,411

Total daily turnover 1,112

IN LEAD (5 per cent)

Close 873.74

Previous 873.74

High/Low 873.74-873.74

AM Official 873.74

Narrow close 873.74

Open bid 36,250

Total daily turnover 12,474

IN NICKEL (5 per cent)

Close 5840-10

Previous 5840-10

High/Low 5840-10-5840-10

AM Official 5840-10

Narrow close 5840-10

Open bid 52,800

Total daily turnover 15,474

IN ZINC, 100 TONNES (5 per cent)

Close 1075.50-50

Previous 1075.50-50

High/Low 1075.50-50-1102-25

AM Official 1102-25

Narrow close 1102-25

Open bid 78,000

Total daily turnover 22,200

IN COPPER, 100 TONNES (5 per cent)

Close 1751.50-25

Previous 1751.50-25

High/Low 1751.50-25-1772-75

AM Official 1772-75

Narrow close 1772-75

Open bid 162,000

Total daily turnover 58,600

IN LINE AND OFFICIAL 500 TONNES

LINE Opening 525 rate: 1,6700

Spot: 1.6700 1.6800 1.6900 1.7000 1.7100

IN ARABIAN GRADE COPPER (COMEX)

Close 301.30-301.60

Previous 301.30-301.60

High/Low 301.30-301.60-301.60

AM Official 301.60

Narrow close 301.60

Open bid 301.30

Total daily turnover 179,241

IN ARABIAN GRADE COPPER (COMEX)

Close 301.30-301.60

Previous 301.30-301.60

High/Low 301.30-301.60-301.60

AM Official 301.60

Narrow close 301.60

Open bid 301.30

Total daily turnover 179,241

PRECIOUS METALS CONTINUED

IN GOLD COMEX (100 TONNES, 5 per cent)

Close 301.1

Previous 301.1

High/Low 301.1-301.1

AM Official 301.1

Narrow close 301.1

Open bid 301.1

Total daily turnover 3,740

IN PLATINUM NYMEX (50 TONNES, 5 per cent)

Close 405.1

Previous 405.1

High/Low 405.1-405.1

AM Official 405.1

Narrow close 405.1

Open bid 405.1

Total daily turnover 3,740

IN PALLADIUM NYMEX (100 TONNES, 5 per cent)

Close 200.25

Previous 200.25

High/Low 200.25-200.25

AM Official 200.25

Narrow close 200.25

Open bid 200.25

Total daily turnover 8,417

IN SILVER COMEX (50 TONNES, 5 per cent)

Close 834.5

Previous 834.5

High/Low 834.5-834.5

AM Official 834.5

Narrow close 834.5

Open bid 834.5

Total daily turnover 8,201

IN CRUDE OIL NYMEX (1,000 BARRELS, 5 per cent)

Close 18.1

Previous 18.1

High/Low 18.1-18.1

AM Official 18.1

Narrow close 18.1

Open bid 18.1

Total daily turnover 77,880

IN CRUDE OIL NYMEX (42,000 US GALLONS, 5 per cent)

Close 18.1

Previous 18.1

High/Low 18.1-18.1

AM Official 18.1

Narrow close 18.1

Open bid 18.1

Total daily turnover 77,880

IN CRUDE OIL NYMEX (42,000 US GALLONS, 5 per cent)

Close 18.1

Previous 18.1

High/Low 18.1-18.1

AM Official 18.1

Narrow close 18.1

Open bid 18.1

Total daily turnover 77,880

IN CRUDE OIL NYMEX (42,000 US GALLONS, 5 per cent)

Close 18.1

Previous 18.1

High/Low 18.1-18.1

AM Official 18.1

Narrow close 18.1

Open bid 18.1

Total daily turnover 77,880

GRAINS AND OIL SEEDS

IN WHEAT COMEX (100 TONNES, 5 per cent)

Close 72.25

Previous 72.25

High/Low 72.25-72.25

AM Official 72.25

Narrow close 72.25

Open bid 72.25

Total daily turnover 2,280

IN WHEAT COMEX (100 TONNES, 5 per cent)

Close 72.25

Previous 72.25

High/Low 72.25-72.25

AM Official 72.25

Narrow close 72.25

Open bid 72.25

Total daily turnover 2,280

IN WHEAT COMEX (100 TONNES, 5 per cent)

Close 72.25

Previous 72.25

High/Low 72.25-72.25

AM Official 72.25

Narrow close 72.25

Open bid 72.25

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AM Official 72.25

Narrow close 72.25

Open bid 72.25

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LONDON SHARE SERVICE

BY TRUSTS SPLIT CAPITAL - Continued

Trust Name	Price	Change
...

OTHER INVESTMENT TRUSTS

Trust Name	Price	Change
...

INVESTMENT COMPANIES

Company Name	Price	Change
...

LEISURE & HOTELS

Company Name	Price	Change
...

LIFE ASSURANCE

Company Name	Price	Change
...

MEDIA - Continued

Company Name	Price	Change
...

OIL EXPLORATION & PRODUCTION

Company Name	Price	Change
...

ON, INTEGRATED

Company Name	Price	Change
...

PAPER, PACKAGING & PRINTING

Company Name	Price	Change
...

PHARMACEUTICALS - Continued

Company Name	Price	Change
...

PROPERTY

Company Name	Price	Change
...

RETAILERS, GENERAL - Continued

Company Name	Price	Change
...

SUPPORT SERVICES

Company Name	Price	Change
...

TRANSPORT - Continued

Company Name	Price	Change
...

WATER

Company Name	Price	Change
...

AM - Continued

Company Name	Price	Change
...

AMERICANS

Company Name	Price	Change
...

CANADIANS

Company Name	Price	Change
...

SOUTH AFRICANS

Company Name	Price	Change
...

TRADED INDEX SECURITIES

Index Name	Price	Change
...

GUIDE TO LONDON SHARE SERVICE

Prices and listing volumes for the London Share Service are defined by the FT 100 Index...

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PROPERTY - Continued

Company Name	Price	Change
...

SUPPORT SERVICES - Continued

Company Name	Price	Change
...

RETAILERS, FOOD

Company Name	Price	Change
...

RETAILERS, GENERAL

Company Name	Price	Change
...

TELECOMMUNICATIONS

Company Name	Price	Change
...

TOBACCO

Company Name	Price	Change
...

TRANSPORT

Company Name	Price	Change
...

LONDON STOCK EXCHANGE

Wall St gain triggers strong rally in London

MARKET REPORT

By Steve Thompson, UK Stock Market Editor

A burst of strength on Wall Street yesterday came to the rescue of a London market suffering from interest rate nerves and the impact of sterling's latest surge.

After an indecisive morning, the London market moved confidently into positive territory during the last 20 minutes of trading as the Dow Jones Industrial Average posted an 80-point plus rise.

At the close, the FTSE 100

was 20.3 higher at 5,932.2, recovering strongly from its earlier ragged performance. The index was down around 36 points before Wall Street's opening.

The late rally in the leaders did not extend to the second-liners and smallcaps, however, which finished the day in negative territory.

The FTSE 250 was never under as much pressure as the 100 index but gave up modest gains to settle 2.9 lower at 5,525.4, having posted a 5.8 rise in the early part of the day. The FTSE SmallCap was up 3.9 at best, but fell into negative ground

during the afternoon, eventually closing at the day's lowest, down 4.9 at 3,629.5.

Dealers said the late surge in UK stock prices reflected a more relaxed attitude by US investors to yesterday's meeting of the Federal Reserve's open market committee, which met to determine interest rate policy.

"The feeling in the market is that the Fed will leave rates on hold but we need to get the whole interest rate thing out of the way before London makes a decisive move in either direction," said one salesman.

He said there were many

fund managers in London still fretting about the possibility of an interest rate rise here after the next meeting of the monetary policy committee, which commences next Wednesday; the decision on whether to increase rates or leave them on hold will be announced at midday the following day.

The minutes of the February meeting revealed the committee was split 4-4 over whether to lift rates, with Eddie George, governor of the Bank of England, using his casting vote to leave rates unchanged.

Commenting on the mar-

ket's technical picture, Richard Lake at Brewin Dolphin, the stockbroker, said the FTSE 100 "remains in a strong uptrend and comfortably above its rising 50-day and 200-day moving averages and a move into the 6,000-6,500 area is not a particularly large rise". But Mr Lake warned of his concern that two dominant sectors, retail banks and pharmaceuticals, continued to ease in absolute terms.

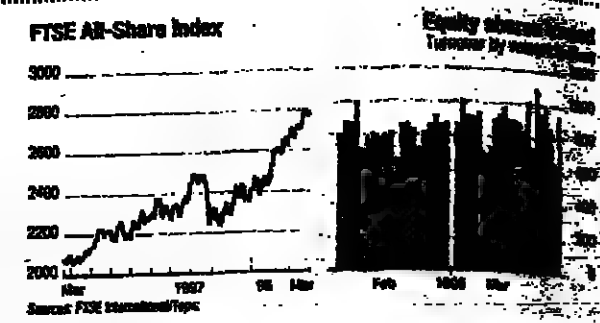
The nagging worries about rates and sterling were only partly offset by more take-over rumours. Bid talk was notable in the retail area

where Next was the star performer, responding to reports that Asda, the food retailer, could make an offer.

Power generators also attracted fresh support as talk that US predators were circling the utilities continued to gain credence.

Oil shares were among the most disappointing areas, falling across a broad front as dealers expressed scepticism about the likelihood of Opec and non-Opec countries adhering to reduced output allocations.

Turnover at 6pm was 837m shares, well up on Monday's depressed level.



Indices and ratios	FTSE 100	FTSE 250	FTSE SmallCap	FTSE All-Share
Index	5932.2	5525.4	3629.5	5932.2
Change	+20.3	-2.9	-4.9	+12.5
Vol	100,000,000	100,000,000	100,000,000	100,000,000
Dividend yield	3.5%	3.5%	3.5%	3.5%
P/E ratio	15.0	15.0	15.0	15.0

BP hit by global oil deal

COMPANIES REPORT

By Peter John and Martin Brice

Further weakness in the underlying oil price following the latest pronouncement by Opec sent BP, the UK major most exposed to oil prices, sharply lower.

The shares fell 18 to 989p and the slide was responsible for much of the overall market weakness early on.

A joint agreement between Opec and non-Opec countries, which will lead to cuts in global production of 1.5m barrels a day, prompted Brent crude to fall more than 80 cents at one stage.

There was some disappointment that the cuts were not higher and John Toal at SG Securities said the initiative lacked credibility.

But the slide was principally a testament to the tried and tested market technique of buying on rumour and selling on fact.

However, analysts added that, with the first quarter out of the way, the market now had hard numbers to work into profit models.

Michael Mayer, of Schroder & Co in New York, predicts that first-quarter earnings will be 45 per cent below the levels seen a year ago.

UK brokers were slightly

less pessimistic. One said the majors would be shielded by improved refining margins and a lower tax charge.

Nevertheless, they acknowledged that a fall of 32 per cent in the oil price since the first quarter last year, and 14 per cent since the previous quarter, is bound to weigh on earnings.

Talk of a tie-up between Asda and Next refused to die and sent both stocks higher.

Next, heavily marked down last week following a profits warning, received an additional boost from director share buying.

David Jones, chief executive, bought 100,000 shares at

540p and the company added that the Next employee share option plan had purchased 1.5m at 549p.

Finally, SG Securities published a recommendation arguing that recent weakness created a good long-term buying opportunity in a quality stock. Next gained 25 to 579p. Asda improved 7 to 202p.

Transport stocks were a focus of investor attention, with the old story of a bid from British Airways sparking the advance at Avista Europe of 13 to 841p, the best performance in the FTSE 250. BA, down 24 to 607p, is said to seek a

tie-up with car hire and tickets.

FirstGroup was also a strong FTSE 250 performer as the shares rose 11 1/2 to 361p following its success in winning the Hong Kong bus franchise. The deal, its first investment outside the UK, marks the beginning of the group's ambitions to expand in China.

Railtrack ran into profit-taking and lost 31 to 989p. The shares had reacted positively to the company's recent network management statement and an upbeat presentation to analysts.

Relief at some good news for the hard-pressed biotechnology sector sent Chiroscience racing ahead 60 to 333p. Zeneca confirmed expectations that it would take a stake in the company and outlined its proposal to pay Chiroscience £15m for 3.58m new shares. Zeneca, which is to pay 48p a share for the 3.2 per cent stake, eased 11 to 236p.

Oxford Molecular, the supplier of software to the biotechnology and pharmaceuticals industry, lifted 15 to 183p after turning in a profit for the first time.

Nycomed dropped 13 to 322p after NetWest advised clients to "reduce" holdings. However, the non-voting shares gained 140 to 222p.

Smith & Nephew fell 12 to 189p after the company said Advanced Tissue Sciences, its joint venture partner for the Dermagraft artificial skin product, had received a warning from the US Food & Drug Administration about its manufacturing plant.

National Power was the strongest Footsie performer in early trading on continuing speculation about a US bid. The stock was up 33, reflecting a rise in the American Depository Receipts. However, the rumours, which were sparked by a Sunday newspaper story, were fading fast by the afternoon. The shares ended the day flat at 612p while Powergen, dragged along in the slipstream, remained 16 aloft at 699p.

The shares rose 42 to £10.73, where they stood at about 33 times earnings, a similar ratio to some of the more expensive information technology stocks.

Restekol initial benefited from the positive sentiment, and gained 10 1/2 to 364p.

The recent trend of strong results from construction-related stocks continued with Rugby Group, which beat most analysts' forecasts with its underlying advance of 20 per cent to 277p.

The dividend of 4p was also usefully ahead of forecasts and the shares responded positively, rising 2 1/2 to 135p in volume of 4m.

Elsewhere in building-related stocks, Ruberoid, the waterproofing systems group, gained 6 to 101p after taking pre-tax profits from £1.2m to £5.6m.

Goldman Sachs downgraded its stance on Blue Circle from "market outperformer" to "market performer" after recent results. Mike Betts at the broker said the shares were now trading in line with his 367p estimate of fair value.

He also eased his forecast for earnings per share by 0.8p to 27.6p for this year. The shares slipped 5 to 366p.

Keyworth lost 5 to 259p after it announced full-year figures that prompted some upgrades but gave no news on any takeover moves.

There had been talk that Vaillant of Germany was lining up a 570p a share bid.

Peatson, the company that owns the Financial Times, resisted the market's early slide with the help of a re-rated "buy" note from Merrill Lynch. The shares were firm all day and closed 3 higher at 970p.

A profits warning from GWR sent the radio station's share price down 14 to 176p and also dragged Capital Radio 36 lower to 705p in spite of an upbeat presentation by Capital to analysts.

FUTURES AND OPTIONS

FTSE 100 INDEX FUTURES (LSE) £10 per full index point	Open	Settle	Change	High	Low	Vol	Open	Settle	Change	High	Low	Vol
Mar 1998	5932.2	5932.2	+14.0	5932.2	5932.2	0	Mar 1998	5932.2	5932.2	+14.0	5932.2	0
Jun 1998	5932.2	5932.2	+2.0	5932.2	5932.2	3	Jun 1998	5932.2	5932.2	+2.0	5932.2	3

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2.71	1.96	23.32	14.24	1888.22	ICI	3,820	1280	+0
2.77	2.00	18.51	23.53	1103.77	Reckitt	2,055	1110	+0
2.03	2.32	21.21	47.84	2243.92	Lectra	7,780	3344	+34
1.85	2.17	24.90	43.29	1882.23	Land Securities	1,160	1673	+13
2.17	2.27	20.33	3.94	2094.41	Lloyds & General	1,307	770	+0
2.43	3.22	18.55	8.55	1400.70	Lloyds TSB	8,400	920	-3
					Luft	4,700	230	-10

NEW YORK STOCK EXCHANGE PRICES

This image shows a full-page scan of a newspaper page, likely from the Financial Times. The page is filled with dense, multi-column text in a serif font. At the bottom left, there is a large advertisement for 'BE OUR GUEST.' featuring the Olympic logo and the text 'When you fly with us stay in touch with your complimentary copy of the FINANCIAL TIMES No FT, no comment.' The rest of the page is composed of various news articles and financial reports, with some sections highlighted by bold headings. The overall layout is typical of a traditional newspaper page.

BE OUR GUEST.



When you fly with us
day in coach -
with your complimentary copy
of the

FINANCIAL TIMES

No FT, no comment.

هكذا من الاصل

JAPAN

WORLD MARKETS AT A GLANCE

Apply the mouse to the mouse wheel to zoom in and out of the map.

THE NASDAO STOCK MARKET

AMEX PRICES

EASDAQ

[illegible]

STOCK MARKETS

Quarter ends in more European records

WORLD OVERVIEW

The end of a phenomenal first quarter for equities saw another batch of records on European bourses, including Copenhagen, Milan, Paris and Zurich yesterday, writes Philip Coggan.

Returns in the first three months of the year have matched many people's expectations for the whole of 1998.

The S&P World index gained 13.1 per cent up to

March 30, and if Japan is excluded the gain was 14.5 per cent.

But Ian Harnett of NatWest Securities, a long-term bull of European equities, said yesterday: "For the first time in more than a year, we are becoming nervous about the excesses in the European bull market and are expecting a 5-10 per cent correction in the next 12 months."

Harnett said the 11.3 per cent gain in March was excessive and was the high-

est monthly return since February 1991. The rise over the past three months was the biggest quarterly gain since January 1986.

"With price/earnings multiples in Europe at 23.5 times, compared to 22 at the peak in 1994, valuations are also running ahead of themselves, making the markets susceptible to higher bond yields if US growth is robust or oil prices rebound."

He added that real indicators, such as the level of

rights issues and the increasing level of interest from retail investors across Europe, were flashing red.

Asian markets were subdued. In Japan, some modest purchases by public funds enabled the Nikkei 225 average to close ahead, but the Tokyo market was still weaker than banks, which revalue their equities at the end of March, would have liked.

In Thailand, the rock that started the Asian avalanche

last year, the market fell for the sixth day in a row after the central bank tightened its lending rules. The effect, brokers said, would be to require weaker banks to raise more capital.

Meanwhile, Moody's, the credit assessment agency, downgraded the ratings of five Thai banks - Bangkok Krung Thai, Siam Commercial, Thai Farmers Bank and Ayudhya.

All this did not deter Mark Mobius, the Templeton

emerging markets fund manager, who said that large, well-capitalised Thai and Indonesian banks could be big winners from the Asian financial crisis.

The new regulations should help the biggest institutions survive in the long run, according to Mobius. "In Thailand, Bangkok Bank and Thai Farmers Bank are the big ones," he said.

London market, Page 32
Currencies, Page 25

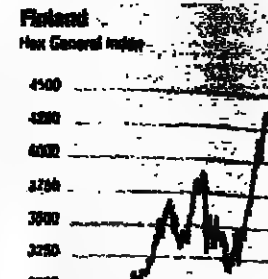
MARKET FOCUS

Finns have come in from the cold

Although the Finnish stock market has been one of the strongest European gainers this year, rising 32 per cent, this has not necessarily been due to the "Emu play" that has fuelled southern Europe and Ireland.

European economic and monetary union will bring identical short-term interest rates to its participants, and long-term rates have already aligned to the benchmark German rate.

Instead of a rally directly linked to the low interest rates, analysts say Finland is only catching up with other European markets in terms of valuations.



Source: Bloomberg

In spite of the relatively solid fundamentals, the recent rally has started to worry some analysts. Last month, a survey of Finnish institutional investors revealed that they had turned cautious on domestic equities as prices rose.

According to a quarterly poll by Gallup Markkinatutkimus for Kauppalehti, the daily business newspaper, about 80 per cent of investors said they would invest in equities over the next six months, down from the 74 per cent that had invested in the past six months.

Hans Roström, analyst at Paribas in London, believes that valuations are starting to look stretched. On a price/earnings ratio basis, Helsinki remains at a discount, with the market trading at 21 times for 1998 against 25.7 times for the rest of Europe. But on a price/cash flow basis the Finnish market is 13 times, higher than Europe's 8.3 times.

Mike Finney, analyst at Dresdner Kleinwort Benson, however, says companies like Nokia remain at a discount to European peers. Merrill Lynch believes there could be a rally if German pension funds start buying Finnish shares once Emu starts - although it is too early to judge how strong demand would be.

Emiko Terazono

Dow surges as FOMC meets on rate policy

AMERICAS

US shares traded higher at midsession as the Federal Reserve's open market committee met to determine interest rate policy, writes John Lasker in New York.

At midday, the Dow Jones Industrial Average had surged 81.96 to 8,864.08, while the broader Standard & Poor's 500 gained 12.14 or 1.1 per cent to 1,105.88.

Falling oil prices ignited the transport sector. Airline stocks made steady advances as UAL, parent to United Airlines, gained 2 1/2% to \$22 and AMR shot up 3 1/2% to \$14.24. Federal Express rose 2 1/2% to \$70.75.

Bond prices also moved higher after the release of the Chicago purchasing managers report. Although the report showed a rise in economic activity, especially in employment and shipments, the closely watched prices-paid component was sharply lower, suggesting that inflation remains well contained.

By midday the price of the benchmark 30-year bond was 1/8 higher at 102 1/8, sending the yield to 5.946 per cent.

Banking and other financial shares rose as bond prices rallied in morning trade. The Philadelphia Stock Exchange's banking

index shot up 18.92 or 2.3 per cent to 852.53. Citicorp gained 3 1/2% to \$143, while Bank of New York rose 2 1/2% to \$53 1/2.

In the Dow, Allied Signal gained 1 1/2% to \$42 1/2, while Boeing rose 1 1/2% to \$51 1/2 and United Technologies advanced 3/4% to \$39 1/2.

But Philip Morris was lower, off 1 1/4% to \$41 1/4 the day after a congressional committee announced new tobacco proposals.

The technology and small-cap sectors moved ahead. The Nasdaq composite was up 18.04 or 0.99 per cent to 1,836.74, and the Russell 2000 index climbed 3.18 higher to 471.42.

Semiconductor shares were especially strong. Motorola surged 2 1/2% to \$59 1/2 and Advanced Micro Devices jumped more than 8 per cent to \$24 1/2.

Dell Computer rose 1 1/2% to \$68 1/2 and Gateway 2000 gained 1 1/4% to \$47 1/2.

TORONTO was lifted by a strong banking sector and the TSE 300 composite index rose 27.78 by midsession to 7,586.58, struggling off weakness in resource stocks.

The quarter-end portfolio shuffling by money managers also supported share prices. Financials and industrials were both 0.7 per cent higher, but price concerns hit oil and gas.

Mexico slow on oil deal

MEXICO CITY edged higher on month-end portfolio buying and expectations that domestic rates would drop.

However, trade was slow on mixed reactions to the Opec deal to cut output and as the market waited for the Federal open market committee to review US interest rate policy. By midsession, the IPC index was 19.27 higher at 5,057.73.

CSFB has increased Mexico's weighting in its Latin American portfolio, at the expense of Brazil and Argentina.

The investment bank forecast a run-up of 15 to 20 per cent in dollar terms over the next three months, against an 8 per cent decline so far this year. It noted:

- signs the government was taking steps to ensure economic stability;
- government moves to trim inflation and exchange rate volatility; and
- the positive earnings outlook for top stocks.

Anglo rally bucks rand fall

SOUTH AFRICA Johannesburg made a fast dash to end the first quarter on a strong footing, and the overall index rose 40.7 to a seven-month peak of 7,571.7.

Anglo, the country's largest conglomerate, rallied 740

cents to R230.80 as institutions put the finishing touches to their portfolio performances, offsetting the shadow of the rand's all-time low against the dollar.

Industrials gained 71.9 to R349.8 and golds added 7.3 to \$14.3 as bullion recovered.

Funds injection boosts Nikkei

ASIA PACIFIC

A last-minute injection of public funds into the futures market boosted share prices in TOKYO on the last day of trading for the fiscal year, writes Michiko Nakamoto.

However, the Nikkei 225 index ended far short of the 18,000 level, widely regarded as an important benchmark.

The Nikkei traded erratically throughout the day. On the positive side was the expectation that public funds would come in to support stock prices. A comment by the head of the government's tax commission calling for tax cuts of ¥10,000bn also spurred positive sentiment.

Purchases by public funds were noticed towards the end of the session in the futures market, which triggered arbitrage buying in the cash market. Post office funds reportedly handed ¥971.2bn to trust banks to invest in the stock market.

At the same time, however, substantial selling came from financial institutions reducing their cross-shareholdings at the year-end. After a turbulent session, in which the Nikkei

MANILA lost 1.6 per cent as investors became cautious following a drop in Asian currencies and ahead of the US Federal open market committee meeting. The composite index fell 35.38 to 2,238.42, also under pressure from profit-taking in some issues that have done particularly well recently.

Among blue chips, PLDT lost 15 pesos to 1,055 pesos and Ayala Land slipped 50 centavos to 18.95 pesos.

The heavily traded Metro Pacific fell 6 centavos to 2.34 pesos after it denied rumours of a possible merger between its telephone business, Smart Communications, and Philippine Telephone.

BANGKOK traded lower as investors unloaded bank and finance issues after the central bank tightened rules on loans for local banks that are likely to force them to raise their capital. The SET composite index was marked down for the sixth straight trading day, losing 5.98 or 1.3 per cent to 459.11.

Analysts said sentiment was weak even before the government's announcement, after Moody's lowered the long-term subordinated

debt ratings and financial strength ratings of the country's five largest banks. That outweighed comments by Mark Mobius, who runs the \$15bn emerging markets fund of US financial group, Templeton Worldwide, that large, well-capitalised Thai and Indonesian banks could be big winners from the Asian financial crisis.

Bangkok Bank fell \$15.50 to \$181.50 and Thai Farmers Bank \$14 to \$175.50.

SINGAPORE saw late selling after SIA dismissed speculation that it was about to announce plans to merge its foreign and local share tranches. SIA originally said a decision would be made by the end of March and rumours of a briefing led traders to believe that a merger announcement was imminent.

SIA local closed unchanged at \$89.30, having touched a high of \$89.65, while SIA foreign finished 20 cents lower at \$81.60, off a low of \$81.40.

Property stocks extended losses since the end of last week as profit-taking continued. The Straits Times Industrial Index closed 19.38 weaker at \$41,629.18.

FTSE Actuaries Share Indices

March 31	Index	Day's %	Change points	Yield %	Dividend	Total return
FTSE 100	2268.73	+0.39	+3.29	1.90	5.11	1230.82
FTSE 250	2268.73	+0.39	+3.29	1.90	5.11	1230.82
FTSE 100	2268.73	+0.39	+3.29	1.90	5.11	1230.82
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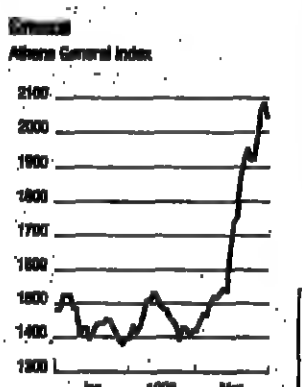
European series

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FTSE 250	2268.73	+0.39	+3.29	1.90	5.11	1230.82

equities and the benchmark Nikkei index reached a fresh high. The index rose 280 or 1.3 per cent to 24,583, with banking shares stronger.

Credit Italiano rose 1.5% to L6.045 after the release of its 1997 earnings, while Banca Intesa added 1.8% to L11.375.

FRANKFURT kept the motor stocks firmly in its headlights on a day in which the broad market managed only a modest advance. The Xetra Dax index was just



27.38 higher at the close of electronic trading at 5,097.35, with investors reluctant to commit fresh funds ahead of the US Federal open market committee.

BMW dropped DM67.50 to DM2,060.95 in the wake of 1997 and first quarter results, with the carmaker's plans to take over Rolls-Royce Motor Cars still weighing on its shares.

Analysts said that while the results were mostly in line with expectations, news that an overvalued pound had significantly hurt results in its Rover division caused some concern.

Volkswagen, which declined to comment on reports that it might raise its offer for the UK luxury car maker, fell DM34 to DM1,425.

AMSTERDAM was hit by profit-taking in low-volume trade and the AEX index lost 2.87 to 1,126.42.

Concerns of oil price volatility hurt Royal Dutch. The group, which owns 60 per

SAINT-GOBAIN IN 1997

NET INCOME OF 5.6 BILLION FRENCH FRANCS

The Board of Directors of SAINT-GOBAIN met on March 26th, 1998 and approved the consolidated financial statements of the Group for 1997.

The final key consolidated figures of the Group confirm the estimates published in January and are as follows:

Major 1997 figures	1997	1996
• Sales	107 028 971 384	100 000 000 000
• Operating income	10 451 9 436	10 451 9 436
• Financial charges, net	(1 887) (1 426)	(1 887) (1 426)
• Reorganisation and other costs	(1 150) (1 203)	(1 150) (1 203)
• Income before tax and before results of sale of non-current assets	8 004 7 326	8 004 7 326
• Results of sale of non-current assets	2 014 211	2 014 211
• Income taxes	(3 355) (2 278)	(3 355) (2 278)
• Net income before minority interests	6 663 5 031	6 663 5 031
• Net income	5 028 4 323	5 028 4 323
• Net income excluding net results of sale of non-current assets	4 300 4 149	4 300 4 149
• Income taxes	11 100 10 678	11 100 10 678
• Capital expenditure on plant and equipment	6 875 7 666	6 875 7 666
• Acquisition of investments	7 175 12 237	7 175 12 237
• Net indebtedness	17 601 14 781	17 601 14 781

SAINT-GOBAIN
INVESTOR RELATIONS DEPARTMENT
100 rue de Valenciennes
F-92000 Nanterre
Internet: www.saint-gobain.com

Group sales are up by 17.2% on a comparable structure basis, mainly due to the consolidation for the whole year of POULET, consolidated since July 1st, 1996. On a comparable structure basis, sales increase by 8.9% in French France and 3.2% in local currency. Sales are split: France 38%; other European countries: 29.1%; America and Asia: 32.9%.

Operating income is up 1,045 million French Francs and represents 9.8% of sales, compared to 10.3% in 1996. The reduction of the operating margin of the Group is due to the consolidation for the first time for the full year of the POULET Specialised Distribution Division (POINT P and LAPEYRE), whose operating margin, as a percentage of sales, is structurally lower than that of the industrial activities of the Group. Excluding Specialised Distribution, the operating margin of the Group represents 10.5% in 1997 against 10.7% in 1996.

Income before tax and before results of sale of non-current assets increases by 829 million French Francs. Financial charges increase by 461 million French Francs due to the acquisitions. Reorganisation and other costs amount to 1,150 million French Francs, due to the important reorganisation program to reduce production costs and improve the Group's competitiveness.

Results of sale of non-current assets are 2,014 million French Francs. This result comes mainly from profits resulting from the disposals of CISE, VACHETTE and 600,000 shares of Compagnie Générale des Eaux.

The increase in the income tax charge is due to the improvement in pre-tax income, profits on disposals and the new tax measures in France. The impact of these measures is a higher tax charge of the Group of 326 million French Francs.

Net Income (Group's share) amounts to 5,028 million French Francs. Earnings per share based on the total number of shares issued at December 31st, 1997 (89,226,813 shares), are 63 French Francs, against 50 French Francs in 1996 (56,642,218 shares). Excluding capital gains, but including the new tax measures of 326 million French Francs, net income is 4,300 million French Francs, an increase of 3.1% compared to 1996.

Cash flow amounts to 11,100 million French Francs, an increase of 422 million French Francs over 1996. It represents 10.4% of sales against 11.7% in 1996. Before the additional exceptional tax charge on profits on disposals which amounts to 624 million French Francs, cash flow amounts to 11,724 million French Francs.

Capital expenditure amounts to 6.9 billion French Francs and represents 6.3% of sales. Acquisition of investments amount to 7.2 billion French Francs, including 2.6 billion French Francs for the acquisition of 17% of POULET in July 1997. Net indebtedness is 17.5 billion French Francs.

The Board of Directors also approved the statutory accounts of COMPAGNIE DE SAINT-GOBAIN, parent company (holding) of the Group. It recorded a profit of 2,948 million against 2,079 million French Francs in 1996.

The Board of Directors will propose to the Annual General Meeting of the Shareholders of COMPAGNIE DE SAINT-GOBAIN, which has been convened for June 25th, 1998, to distribute dividends of 1,850 million French Francs, against 1,472 million French Francs last year. The dividend per share would therefore be 18.50 French Francs, an increase of 1.50 French Francs on the previous year. A tax credit of 9.25 French Francs should be added, giving a gross dividend of 27.75 French Francs per share. This year, the possibility of opting for the payment of the dividend by way of shares will not be proposed; the dividend will be paid integrally in cash and the shares will be ex-dividend on June 29th, 1998.

The Annual General Meeting will also be asked to approve the renewal of the mandates of Mr. Jean-Louis BEFFA and Mr. Jacques-Louis LIONS, and the nomination, as an Independent Director, of Mrs. Isabelle BOULLLOT, Executive Vice President of La Caixa des Dépôts et Consignations, and Mr. José-Luis LEAL MALDONADO, former Minister of the Economy in the Spanish Government and currently President of the Spanish Banks Association and President of the European Union Banking Federation, who will replace Mr. Claude BEBEAR and Mr. Guy DEJOUANY.

Key role of business intelligence

There are lots of ways for your business to enter the Internet

FINANCIAL TIMES REVIEW



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Bioinformatics:
Breakthroughs in
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System security
Macrovirus menace:
Software industry
steps up the fight
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Information Technology

Wednesday April 1 1998

The world market for gathering, analysing and distributing data is likely to be worth \$70bn by the end of the century, reports Paul Taylor

Key role for business intelligence

In the dawning information age, knowledge may well turn out to be a company's most valuable asset - and the 'business intelligence' tools used to acquire such insight could prove vital to building and maintaining a competitive edge.

Big companies, including those in the retail and financial services sectors which have collected data on their customers and markets for many years, are now beginning to store it in huge 'data warehouses' and then analyse, 'mine' and manipulate that data for competitive advantage.

Business intelligence - the gathering, management, analysis and distribution of data - enables companies to glean knowledge from their huge information databases, data warehouses and external data sources. This knowledge can then be used to make strategic decisions about which markets to enter, which customers to target and which products to promote in an effort to improve profitability.

"Businesses are increasingly competing on the basis of information," says Ben Barnes, general manager of International Business Machines' global business intelligence business unit. "They are mining vast amounts of business and syndicated data and providing access to valuable data on company intranets and the Internet."

These businesses are discovering new insights, and using that knowledge to drive decisions that make their companies more competitive, says Mr Barnes. "This is largely a result of businesses aggressively seeking new ways to differentiate themselves and grow market-share in an increasingly competitive, global and deregulated environment."

Highlighting the growing importance of the market for business intelligence (BI) market, IBM announced a company-wide BI initiative last month including partnership agreements with leading BI software developers such as Arbor Software, Business Objects and Cognos whose Impromptu and PowerPlay software has brought sophisticated online analytical processing tools to the corporate desktop.

Inevitably, in an emerging market segment, there are many definitions of business intelligence - a term coined by the Gartner

Group a few years ago. However, IT analysts generally define BI as the ability to access and analyse information as required, and use it to make better business decisions.

This broad definition embraces a number of technologies including data warehousing and data mining, query and reporting, executive information systems (EIS), decision-support systems (DSS) and multi-dimensional analysis or OLAP (online analytical processing) tools.

Ron Zamboni, chief executive of Cognos, has a simple definition. "Business intelligence is what industry-leading corporations rely upon to ensure success," he says. "Integrating historically separate functions such as data access, reporting, exploration, analysis, and forecasting, business intelligence gives decision-makers the information they need to find solutions to business problems."

Some estimates suggest that businesses today only use between seven and 10 per cent of the data they have themselves generated over the years.

In part, the move to analytical systems has been fuelled by technological advances including the arrival of relatively low-cost high-power parallel processing systems, inexpensive data storage and the development of new algorithms for data mining. At the same time, the rapid development of corporate intranets has provided an easy and powerful way to distribute the knowledge gleaned from BI systems.

Estimates for the size of the BI market vary dramatically. IBM, quoting the Palo Alto Management Group, claims the business intelligence market will grow to be worth as much as \$70bn by the turn of the century.

What is beyond doubt is that the BI market is growing rapidly. "As businesses try to differentiate themselves in a more competitive 'e-business' environment, they are relying on business intelligence as the nucleus of an integrated customer relationship management programme," says IBM's Mr Barnes.

"The business intelligence market is very hot and is becoming increasingly mainstream, with some segments experiencing year-over-year growth of more than 100 per cent," says Howard



Drilling through the data mountain yields golden nuggets of business information.

Dresner, research director of the Gartner Group, a leading authority on BI markets.

Some elements of BI are not new. For example, Comshare, founded in 1966, pioneered OLAP tools with a product called System W, launched in 1982, and by the mid-1980s the first EIS system, Pilot's Command Center, had been developed.

In 1990, Cognos launched PowerPlay, the first desktop OLAP tool, and throughout the 1990s the pace of development has accelerated, helped along in 1993 by the

publication of a seminal paper by E F Codd & Associates commissioned by Arbor Software and entitled *Providing OLAP to User-Analysts: an IT Mandate*.

Today, Nigel Pense, one of the authors of *The OLAP Report*, the sector 'bible' published by Business Intelligence, a London-based research, publishing and conference group, says there are more than 30 companies claiming to provide online transaction processing (OLTP) products.

"BI and OLAP data-mining tools are concerned not with

what happened yesterday, but what the data can tell us about tomorrow," says Ian Mecklejohn of Business Intelligence.

The OLAP Report estimates that the fragmented OLAP market, which is led by Oracle, Hyperion Software, Comshare, Cognos and Arbor Software, was worth about \$1bn in 1996 and about \$1.4bn last year. The entry of Microsoft into the market later this year with an OLTP server code-named Plato, is likely to boost a technology already on the verge of wide-scale acceptance.

However, the launch of Microsoft's offering could also trigger the restructuring of a market which *The OLAP Report* says has shown a 40 per cent growth rate over the past four years. "We expect this to drop slightly in 1998 and in later years for several reasons - it is hard for markets of this size to grow so rapidly, there is a degree of market saturation, and we expect average prices to reduce sharply once Microsoft enters the market - though volumes will grow more strongly than ever."

In another segment of the overall BI market, International Data Corporation, the IT market research company, estimates that the market for data warehouse hardware, software and services, will grow from \$8.1bn in 1996 to \$23.8bn in 2001, a compound annual growth rate of 24 per cent.

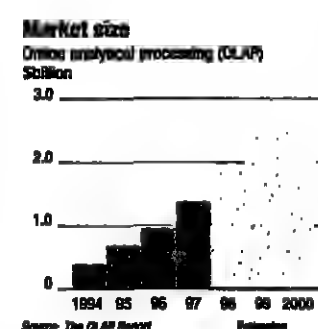
Data warehouses and data marts - smaller repositories for departmental data - account for the bulk of BI revenues, says Richard East, vice president of Enterprise Systems for NCR, the leading data-warehouse vendor. Among NCR's clients, Wal-Mart, the US retailer, has built the world's largest data warehouse containing 24 terabytes of data. (If a book contained a terabyte of information, it would be 32,000 feet high - taller than Mount Everest.) Mr East emphasises that companies need to take a holistic view of BI and not just focus on the infrastructure - "BI has to be aligned to business strategy," he says.

According to a Dataquest survey, published in February, data warehouses are being used for a wide variety of decision-support requirements ranging from *ad hoc* questions and executive information systems to business intelligence and OLTP. Overall, the finance, marketing and sales departments are viewed as the most important users of data warehouses, although many companies are also providing access to data warehouses for customer service, new product development and human resources departments.

A third of the European companies interviewed by Dataquest use their data warehouse systems for targeted marketing campaigns while one fifth see data mining as the systems' most important role. According to Meta Group, the US-based market analyst, the market for data mining tools in 1994 was worth just \$50m but had grown to around \$300m last year and is predicted to reach \$800m by the year 2000.

Other rapidly growing areas of business intelligence include data visualisation tools such as those developed by SAS Institute which help business managers interpret the results of data mining exercises, and performance management application software such as Comshare's Commander Decision which is designed to provide line managers with the information they need to make business decisions.

David Alcock, in charge of Comshare's UK and European distributor operations, claims the technology behind the latest version of Commander Decision,



launched a few months ago, "gives users a way to easily cull relevant information for analysis from what would otherwise be an overwhelming amount of data - it takes visual understanding of large volumes of data to a whole new level for our customers."

Similarly, SAS Institute believes its tools will help transform the use of corporate data by enabling users to discern patterns and trends which were obscured from view. For many companies, attempting to interpret data is like "trying to drink from a fire hose," says Alastair Sim, head of product management at SAS in the UK.

Significantly, companies such as SAS, Comshare and Cognos are also opening up BI applications to a much wider corporate audience. As Howard Dresner of Gartner notes: "Up until the early to mid-90s, business intelligence was an esoteric discipline - reserved for statisticians and analysts. The BI market was small, where a limited number of software vendors thrived by selling complete development environments replete with multi-dimensional databases, modelling languages, statistics and user interface tools."

BI software was also expensive, typically costing between \$2,000 and \$8,000 per user.

However, over the next few years, Mr Dresner predicts that there will be "a maelstrom" in the BI market. He forecasts that this whirlpool will be driven on the demand side by the emergence of BI as a mass market, growing deployment sizes, user 'graduation' to increasingly sophisticated functionality and the importance of enterprise resource planning applications.

Supply side forces include the entrance of large BI vendors such as Microsoft and Oracle, ongoing consolidation and acquisitions, the loss of differentiation, the importance of the web and the emergence of BI applications and suites. Against this backdrop, analysts insist that information is no longer a tactical tool, but a strategic 'differentiator' that separates high growth businesses from those soon to be left behind.

"Powerful, transaction-oriented information systems have become standard in every major industry, effectively levelling the playing field for corporations around the globe," notes IBM.

"Industry leadership now requires analytically-orientated systems - the systems that generate information on which pivotal strategic decisions can be made."



There are lots of ways for your business to enter the Internet



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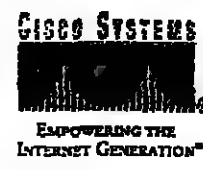
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FT-IT 2

IT

NEWS UPDATE

Governments and financial markets are finally realising the seriousness of the Millennium Bomb, reports George Black

Awareness of year 2000 crisis reaches the top

Governments, stock markets and insurers are at last waking up to the potentially catastrophic impact of systems failing to recognise the year-2000 'bomb'.

In the UK, the government-supported Accounting Standards Board has issued an instruction to all companies to disclose their year 2000 plans, including an assessment of the risks and the costs involved in handling the issue, in their current year's accounts. The London Stock Exchange has written to listed companies urging them to act on this instruction.

Andrew Lennard, technical director of the ASB's urgent issues task force, noted that in a civil action against a company which did not comply the directors could be held personally liable.

The French Stock Exchange has insisted that companies must present their shareholders with credible strategies to tackle the date change.

Companies must disclose in their 1998 accounts the nature of their preparations, contingency plans, costs and the likely impact on their financial results, ordered the operations commission of the Bourse. This follows a report by management consultancy Ernst & Young which said that France was lagging behind other countries in dealing with the crisis.

The Australian government has written to its listed companies requiring them to provide information on their year 2000-readiness by the end of June. The German financial authorities are reported to be discussing similar action. Last year, the US Securities and Exchange Commission ordered US firms to disclose their progress on the issue. The authorities worldwide are recognising that the staff shortage is the most worrying aspect of the situation. In the UK's recent budget, £90m was allocated to a training scheme to increase the number of IT-skilled people.

Sceptical reaction

The industry is sceptical about the plan, however. Terry Riddle, vice-president of software tools vendor, Reasoning, says it is not possible at this late stage to put people through a short training course that will enable them to cope with the problem. The European IT Observatory reports that an acute shortage of programmers and analysts is affecting the entire European industry. In the next five years, Europe will need between 1.5m and 2m more IT professionals. In the US, industry representatives have claimed there is a shortage of 340,000. Next month, the UK government will

introduce tax relief as an incentive for firms to address the so-called millennium 'bomb' problem - or the 'Y2K' issue, as it is also called. Tax relief on systems changes could be claimed as current expenditure, in the year in which money is spent, rather than as capital expenditure spread over four years.

However, this measure also drew criticism from the industry, since it could mean that companies are encouraged to de-bug systems which would be better replaced. In London, marine and aviation insurers are looking for ways to introduce exclusion clauses into their contracts to protect themselves against the possible impact of systems failures.

Predictions of the impact of the crisis continue to worsen. Ed Yardini, chief economist at financial services firm Deutsche Morgan Grenfell, says there was a high chance that the Y2K problem could spark off a global recession. Concerns about the effect on public services are also growing. In the US, a report by Congressman Steven Horn said that US government departments were badly behind in their efforts to achieve compliance. In the UK, the Conservative Party has called on the government to guarantee that public services will function on January 1, 2000.

PC sector worries shrugged off

Investors appear to have shrugged off worries about a possible slowing down of the personal computer business.

Profits warnings from Compaq, the leading PC supplier, and Intel, the chip-maker, caused a temporary blip in confidence, but very soon financial markets were back to normal.

Intel's statement caused the US and European stock markets to be marked sharply down.

The chip maker said it expected revenues to be down by about 10 per cent in the first quarter of its year

compared to earlier quarters.

Compaq said its first-quarter results would be less good than expected because of a slowdown in the US market in the first quarter of the year which had caused a build-up of inventory.

Analysts said Compaq's weaker position was also due to increasing competition for PC sales in the US from IBM.

Compaq's warning hit the shares price of competitors, including Dell and Gateway 2000, and components suppliers such as disk drive makers Quantum and Seagate.

Both announcements signalled that competition is increasing and profits in the PC sector could continue to be affected.

For Intel, the shift to under-\$1,000 machines could mean that personal manufacturers will buy more from its competitors Advanced Micro Devices and Cyrix.

AMD's share price has gone up since Intel's fall.

For Compaq, there is a price war which began towards the end of last year and is now getting tougher. The leaders seem to be increasing market share at

the expense mainly of second-tier vendors but also at the expense of their profits.

Compaq and Hewlett-Packard among others have cut the prices on personal computers and servers recently. Analysts at IDC and Dataquest say that PC sales have been increasing as a result of lower prices but profits of the manufacturers must be suffering as they are in effect buying market share.

IDC said prices were down 25 per cent in a year and were falling faster than at any time since 1991.

Net security causes concern

US and European government officials have been discussing how the Internet can be made more secure, after hackers broke into systems of US government departments and the space agency, NASA.

An Israeli teenager was arrested and five other young people in the US and Israel were questioned in connection with the incidents. Since then, a number of corporate Web sites have been defaced by hackers in apparent 'revenge' attacks.

Meanwhile, the Clinton administration is seeking funds from Congress for a crackdown on hacking. The number of criminal cases against hackers in the US has more than doubled in the past year, the Federal Bureau of Investigation told a senators' hearing.

Hacking and viruses are the two biggest threats to the Internet, according to a survey carried out by NOP for the UK's Department of Trade and Industry and a number of industrial partners among 1,000 UK information security

managers. The report concluded that increasing use of the Internet was likely to boost the number of security breaches.

However, the survey said it was sparsely rather than concern about security, which was holding back many UK companies from using the Internet for electronic commerce.

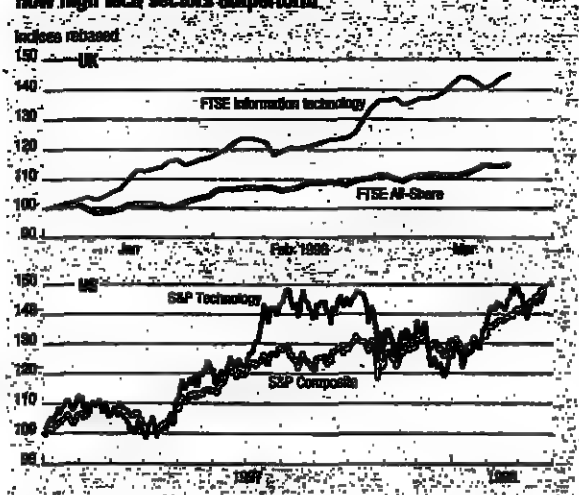
It predicted that when businesses became more enthusiastic about using the Internet they would also become more concerned about security weaknesses. Hacking and

viruses were a much bigger concern for Internet users than credit card fraud, it noted.

A study of the Internet by market research firm Ovum found that less than half of 400 business users across Europe were concerned about security. Ovum said the figure was surprisingly low compared to previous studies and this was partly because of improved methods of protection such as firewalls.

IT and the law: see reports, pages 12-14

How high tech sectors outperform



Source: InterForum, SAP AG, FTSE

Research by George Black

E-commerce set to boom

InterForum, the IT vendors' consortium, says in a new white paper that the level of business transactions on the Internet is still low but is set to explode as more mature products are delivered to the market. The World Trade Organisation's report *Electronic Commerce* also predicts that the volume of electronic commerce could rise to \$300bn by the end of the century.

InterForum website: <http://www.interforum.org>

ment in competitive advantage, according to a study by Cambridge Information Network.

CIN, an offshoot of the US company, Cambridge Technology Partners, says that few companies consider measuring return on investment based on 'softer' issues such as increased productivity or contribution to strategic objectives. "For the vast majority, the techniques for measuring ROI remain focused on payback on investment," it says.

Brighter prospects for Netscape

Netscape, the company that invented the browser software that sparked the Internet boom, is poised to become a strong player in electronic commerce, despite gloomy reports on its financial position, contends Giga Information Group.

The market research firm says Netscape has developed strong Internet-based technology and has won some large customers, so companies exploring e-commerce should not dismiss it as a viable player.

Users want thin clients

Morse Group, a UK workstation reseller, conducted a survey which found widespread approval for the concept of network computing. Out of around 200 IT directors and managers in UK companies, 83 per cent intended to use thin clients or network computers. But most were held back by lack of software and lack of bandwidth.

The US research group Zona says the worldwide market for thin clients grew 35 per cent last year to a total of 350,000 units - still a relatively tiny number compared to the PC business. International Data Corporation (IDC) says that IBM, Sun and Hewlett-Packard are the best-known brands of network computer (NC). The machines are spreading slowly but would do better if the vendors would explain their benefits more clearly, says IDC. It says NCs are mainly being deployed instead of personal computers rather than terminals and 80 per cent of users are aiming to cut the cost of ownership.

IT is seen as an overhead

Most IT expenditure is still seen as a cost overhead, rather than as an investment.

Corporate web sites condemned

The web sites of the UK's top 100 companies are poorly rated in a study by the Interactive Media in Retail Group. Only 2 per cent are given the highest rating of five stars. Nine of the companies are still without a site.

DMRG says the general level of understanding and commitment demonstrated by the sites is "woefully inadequate" and gives shareholders little reason to be confident. It argues that almost no company is doing this type of development well on its own.

External partnerships and opinion are essential to enable companies to "think outside the box," it says.

Net software piracy soars

Internet-related software piracy is at an all-time high, says the Federation Against Software Theft. In January, it amounted to 28 per cent of all software piracy, up from 20 per cent the previous month, the association estimated.

More staff go freelance

Around a third of IT staff leaving user-companies are going freelance, rather than moving to another employer, according to a UK survey by Hay Management Consultants. Staff turnover has tripled in the past five years to 10 per cent. Recruiting difficulties are being experienced by 70 per cent of companies.

CeBIT breaks records

Around 670,000 visitors attended CeBIT last month, confirming the Hannover-based information technology show as the world's largest IT extravaganza. More than 7,000 companies exhibited at the show. See report on page 17.

New search for winning web sites

Following the success of the 1997 FT Business Web Site of the Year competition, entry details of the 1998 competition will be announced in the next issue of the FT-IT Review on Wednesday May 6. The competition is sponsored by UUNET UK, Europe's largest Internet service provider.

THE MONTH IN BRIEF

Bill Gates testifies

Microsoft chairman Bill Gates gave evidence before the US Senate Judiciary Committee in its investigation into the alleged breach of an agreement regulating the company's licensing terms.

Competitors have claimed that Microsoft, the world's largest software company, operates an unfair monopoly by forcing personal computer manufacturers to install its Internet access software Internet Explorer with its PC operating system Windows.

The US Justice Department has now extended its inquiry into Microsoft's role in developing the Java language. A poll carried out by the industry analyst Xephon among 230 IT managers worldwide found that 60 per cent of them thought Microsoft was now more influential than IBM had been in its heyday - only 9 per cent said they did not believe this.

Java for windows

Microsoft has said it is to introduce Java tools linked to its Windows operating system, thus further angering rivals who hope Java could become a platform-independent industry-standard language. Microsoft said its Java development tools would enable developers to write software for use on Windows only.

Sun Microsystems, IBM and others have accused Microsoft of trying to undermine their efforts to produce a language which could run on any operating system. Microsoft argues that its tools will make it easier for people to write applications in Java.

CA drops CSC bid

Computer Associates dropped its \$8.8bn hostile bid for Computer Sciences Corporation after an acrimonious public wrangle. CA chief executive officer Charles Wang said it might renew its interest if CSC's share price fell. Its withdrawal leaves CSC looking for a partner, which it had begun to do before the bid by CA. Analysts say that CSC is still an attractive target for a predator because its performance has been poor, but the outsourcing business in which it is involved is growing rapidly. CSC has said it intends to remain independent.

Wang buys Olivetti services

Wang Laboratories, the US former computer maker turned software developer, has bought the computing services arm of Olivetti, the Italian computer maker turned telecoms company. Olivetti is handing over its Oleya operation to Wang, which in exchange is giving Olivetti an 18.6 per cent stake in its business. This makes Olivetti Wang's largest shareholder, but at a high cost - Oleya made up more than 60 per cent of Olivetti's revenue.

Olivetti had already disposed of its loss-making personal computer business. There has been speculation that Mannesman, the German company, may be looking to buy a stake in Olivetti, but Mannesman has denied any such plan.

ICL to float in 2000

ICL, the UK subsidiary of Japanese computer maker Fujitsu, has confirmed that it intends to float on the London Stock Exchange in 2000, after announcing a return to profit in the past year. Pre-tax profit for 1997 was \$30m on revenue of £2.47bn, compared to a loss of £2.5m on revenue of £2.52bn last year. In the past three years the company has moved from computer manufacturing into computing services.

Web via power lines venture

Nortel and United Utilities have formed a joint venture company to sell Internet access via the electricity lines. The technology was developed by Nortel and Norweb Communications, part of United Utilities. The joint venture, Norweb DPL (Digital PowerLine), intends to promote a service offering Net access through the power lines at one megabit per second - ten times faster than ISDN.

Emu specification published

BASDA, the Business and Accounting Software Developers' Association in the UK, has published a specification for producing software systems that can cope with transactions involving the euro currency. It promises to certify systems as capable of handling the task.

Oracle profits up 27 per cent

Leading business software vendor Oracle produced better than expected financial results for the third quarter of its year. Its profit was up 27 per cent to \$215m on revenue up 27 per cent to \$1.75bn. This amounted to 22 cents per share, against an analysts' consensus expectation of 19 cents per share, as stated by FirstCall.

The company lost around half of its market value after it said in December that its sales had fallen off. It has blamed part of the trouble on the south-east Asian financial crisis. More recently it has referred to strong competition from Microsoft in the database market and SAP in the applications market.

SNI seeks US growth

Siemens-Nixdorf Information Systems must grow its business in the US, if necessary through acquisition, in order to compete in the top league of IT companies worldwide, said its president and chief executive Gerhard Schulmeyer. Expanding the company in the US was the main challenge he would face in the next year, before he resigned his post as chief executive.

Andersen up 25 per cent

Andersen Consulting, the leading IT services company, reported a 25 per cent increase in revenue to \$6.8bn for 1997. The company said it was the fourth consecutive year in which growth was greater than 20 per cent. It did best in the US where revenue was up 29 per cent, followed by the European and Middle Eastern region, 23 per cent, and Asia Pacific, 16 per cent. The strongest growth was in the energy sector, followed by electronics.

Bay Networks expects fall

Bay Networks, one of the leading network product manufacturers, said it expected third-quarter revenue to be down about 10 per cent below the second quarter because of a weakening of demand. Profit would be down but it would still be in the black, it said. Technology changes in the market lay behind the fall in demand, the company said.

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The FT Review of Information Technology

This review is published on the first Wednesday of the month. In addition, FT-IT features appear in the 'Inside Track' section of the FT on each of the other Wednesdays of the month. The IT Appointments section is also published each Wednesday.

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The next issue: Wednesday, May 6. Themes will include digital broadcasting, developments in transport telematics, plus a special focus on directions in IT in training. Plus: IT news update and interviews with key figures in the IT industry (see also information panel on page 18 of this issue).

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Bob Finocchio surprises Wall Street

Informix, the database pioneer, sharpens its market strategy

Bob Finocchio, president, chairman and chief executive of Informix, the database group, does not mince words. "I would say, six months ago we were pretty much dog-meat," says the former 3Com Systems president who took over at Informix in July last year.

"I think when we made our announcements in mid-November about our plans for recovery, restructuring, recapitalisation and completion of the [results] restatement, there certainly was some level of scepticism about our ability to execute, and Wall Street pretty much stayed on the sidelines."

Not any longer. In February, Informix startled Wall Street not with another profits warning – but by reporting earnings of five cents a share for the 1997 fourth quarter, instead of the consensus 16 cents a share loss analysts had expected. "For the first time in a long time we were able to give them a positive surprise," says Mr Finocchio.

Indeed, less than a year ago, there were serious doubts about whether the database pioneer, founded in 1980 by Roger Sippl and Laura King, would survive at all. Shares in the company plunged last year after Informix reported a sharp decline in revenues and huge first quarter losses.

As the company's financial disclosures came under increased scrutiny, shareholders responded by launching a handful of lawsuits and called for the resignation of Phil White, Informix's former chairman and chief executive. Mr White left Informix shortly after Mr Finocchio was appointed.

Mr Finocchio, who studied economics at Santa Clara University and then graduated from Harvard Business School, began his career at the Bank of America in 1976, progressed to Rolm, the telecom equipment group, and joined 3Com, the networking equipment group, in 1995.

At 3Com, he helped reposition and grow the group and was named president of 3Com Systems

in 1996. But he knows the challenge facing him at Informix is much bigger. "There is a huge amount of work still to be done," he says. "While the fourth quarter was encouraging, and I'm very, very pleased with it, we are under no illusions about how hard the work is that we still have to do."

His initial task was to stabilise the company. "We announced our plan on November 18 and by that time we had achieved a lot, in terms of completing the restatements, reducing operating expenses, raising additional capital and guaranteeing to people that the company was on a stable financial footing."

"We announced at that time that our focus was going to be on the database marketplace. Since then we have honed our message considerably."

While most of Informix's rivals have been diversifying, Mr Finocchio says Informix wants to be known as Informix, the database company. "It is our objective to be the best database company in the world."

"This is somewhat controversial, but this is very simply a 'stick to the knitting' kind of strategy. This is what we are good at, we have a strong reputation and we have substantial leadership with our technology. I'm convinced there is a strong and attractive market available for us."

He splits the database market into three broad categories – the low-end, mid-range and high-end. The low-end of the market is dominated by Microsoft and shrink-wrap products. "They can charge anywhere from a very low price to zero for the product so it is not an attractive market for us," he says.

Similarly, while he acknowledges that the mid-range market – which includes 'industrial strength' databases – sold mainly to support packaged applications such as SAP, Baan and PeopleSoft – is an important market, he adds: "It is also a difficult market because databases in this segment have been somewhat commoditised and it is very hard for database vendors



Finocchio: 'We will focus on the high-end of the database market'

to differentiate products."

As a result, he says the mid-range database market has been subject to very intense price competition. "While this is an important market for us, we have to be careful again that we don't optimise our business model around it because it is the lowest gross margin business."

Instead, Mr Finocchio says Informix will focus on what he called "the high-end" of the database marketplace. "High-end, not so much defined as big customers, but high-end as defined by customers who have high levels of requirements – customers who use information technology as a source of competitive advantage."

Typically, he says, these customers don't gain competitive advantage by buying packaged software. "It is obvious that if your competitor can buy the same software as you that it is not easy to differentiate yourself."

Within the high-end market segment, Informix is targeting three horizontal application areas, "where we have explicit competitive advantages," and

which he believes have tremendous opportunity for growth.

The first of these areas is high performance OLTP (on-line transaction processing) – traditionally a strong area for Informix. Mr Finocchio believes Informix can continue to do well in this area because of the specific architecture of its database product.

The second area Informix is targeting is data warehousing. "We have done quite well in data warehousing over the past five or six months, winning some very large transactions in highly demanding environments," says Mr Finocchio. "Again, we have sustainable advantages here driven by the architecture of the product, but we also have very deep experience building data warehouses for customers."

The third horizontal application area is web and content management. "This has to do with our Universal Server product, now called the Universal Server Option," he explains. "We've experienced very good growth in this area."

"Certainly, we made a lot of

marketing and positioning errors and we have had to work very hard working through the early adopter cycle of this market," he says. Nevertheless, Informix now has more than 1,000 customers using Universal Server Option or some variant of it.

"I'm very encouraged by what I am seeing in this part of the market," he says. "This capability is critically important for customers going forwards. We are really seeing opportunities in two broad areas involving web and content management."

He points out that "people building websites based on flat file systems quickly realise that they are very awkward, hard to manage, don't scale and the cost of administration is extremely high. It is so easy for a website to become out of date."

"For websites to make money, they need a lot of stuff, they have to be exciting – that's very hard to achieve if all you're doing is putting a brochure on line. By hosting a website in an object relational database you gain all the scale advantages and cost-of-ownership advantages of relational, coupled with the capability of producing a very exciting experience for the user."

"A relational database can create a customised HTML page on the fly for a particular user. It is very dynamic and customised – and, as sites become more optimised around electronic commerce, that object relational technology will be the best approach."

He emphasises again that this is still nascent. "But many customers are building sophisticated e-commerce sites based on object relational technology and I think we are just at the absolute beginning of this product lifecycle."

Nevertheless, he says his expectations for Informix's object relational database technology are realistic. It is not going to be a multi-billion dollar business, but it is going to be slow and steady. "If you look back at how quickly relational bases ramped up, it didn't turn into a \$10bn marketplace the first year."

Overall, he says he is confident Informix now has right strategy. But he adds: "I have to be very careful that we don't assume that our work is over. We still have a lot of very hard work to do. We have made huge progress from the financial standpoint – we have stabilised the company, we are making money – but the challenge remains for us to grow the top line, to demonstrate to the market that we will continue to be successful at the high end."

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COMPAQ

TECHNOLOGICAL ADVANCES • By Geoffrey Naim

Internet set for key role in healthcare

Expanding applications range from international medical research to telemedicine and online diagnostic services for patients in remote areas

The enormous advances in information technology in recent years have had an important knock-on effect in the health sector. The efficiencies obtained from applying IT to streamline healthcare management can release more funds for investment in clinical technologies to improve the prevention and treatment of illnesses.

However, too many health authorities are still struggling with paper records or piecemeal automation - the result of years of stop-go funding and chronic under-investment.

Nurses and junior doctors can spend 30 per cent of their time chasing information, according to John Kane, managing director of Siemens Healthcare Systems, a UK supplier. He says the health sector is more commercially focussed than before, but still devotes only one per cent of its income to IT, compared with four per cent in the banking industry.

"It's widely recognised that the percentage spent on IT has to increase," he says. The industry is not short of ideas on how to spend the money. Telepathology, computer-assisted surgery and high-tech ambulances represent just a few of the applications made possible by recent developments in IT.

Drug development has undergone a similar revolution thanks to computer modelling techniques. "IT is becoming a key component of pharmaceutical research," says Tony Marchington, chief executive of Oxford Molecular, a UK company specialised in drug design software. "I can see the day when the requirement for 'wet' chemistry to design drugs will be a lot less than it is today."

Oxford Molecular's software aims to speed the process of screening the thousands of new drugs designed each week using computer modelling. Computers play an essential role in unravelling the mysteries of human genes. Researchers in the Human Genome Project (see facing page) are employing powerful supercomputers, such as the two 24-processor Cray Origin2000 systems recently installed at the University of Tokyo, which will be used for DNA research, data mining and molecular visualisation.

The Internet is becoming a vital tool for researchers and, more recently, for the healthcare industry as a whole. Analysts predict US healthcare providers will routinely use the Internet in 2000 to check insurance eligibility status or access patient records.

The Internet can also be used to bring advanced healthcare to a wider market. Last month, US vice president Al Gore and Russian prime minister Viktor Chernomyrdin witnessed Internet-based telemedicine during a visit to Silicon Valley. The two leaders saw a demonstration of an ultrasound examination of a pregnant woman in which the ultrasound images of the foetus were transmitted over the Internet to a standard PC.

"The Internet is literally changing the way we work, live, play and learn, in ways we are just beginning to imagine. One of the most powerful applications will be in the field of medicine," says John Chambers, president and chief executive officer of Cisco, which supplied the Internet routers used for the demonstration.

**ET
IT**

IT in medicine and health services

A seven-page report, highlighting advances in international research and health services, using information technology

In northern France, web browser technology allows the medical records of HIV patients to be accessed by hospitals and general practitioners using remote access technology from Shiva Networks.

New HIV treatments emerge almost daily and a key to improving care for HIV patients is ensuring their files are up to date. The French project, which involves 80 doctors in the Pas de Calais region, uses a centralised database to store the patients' treatment history. Confidentiality is assured by a various security checks.

The European Union has long advocated using IT to reduce the inequalities in healthcare provision across Europe. "The increasing use of IT in the healthcare sector will have a major positive effect," says Martin Bangemann, the Commissioner responsible for IT, who saw the fruits of EU-funded

research in health telematics at a recent conference in Barcelona, Spain.

The life expectancy of cancer patients can be improved - by 20 per cent in the case of breast cancer - using best diagnostic and therapeutic practices. One of the projects demonstrated at Barcelona allows pathologists to obtain second opinions online using a network of 50 pathologists in seven countries.

Several EU health telematics projects feature smartcards, an area where Europe has a worldwide lead. One, Cardlink, aims to ensure vital medical information can be retrieved from a smartcard and converted to a different language if an emergency occurs in a foreign country.

Every year in Europe, 1.5m healthcare professionals exchange more than 60m files. The EU hopes to improve efficiencies by communicating much of this information electronically using electronic data interchange (EDI).

In 14 regions in Europe, up to 26 per cent of healthcare messages are sent by EDI, thanks to another EU project. US consultancy Frost & Sullivan predicts EDI will be widely adopted in the US market, driven primarily by the trend to reduce healthcare costs by doctors affiliating with larger, more competitive organisations.

This generates new IT requirements to improve efficiency and better enable organisations to win cost-based managed-care contracts. The US healthcare industry is painted by its many critics as a giant out of a control which could swallow more than 20 per cent of US gross national product by 2000.

Federal Reserve Chairman Alan Greenspan told Congress last month that Medicare - the publicly-funded old-age health programme - would face "massive strains"



Live video link: Dr Richard Manning using revolutionary ET videoconferencing technology at a UK health centre to discuss his patient's unborn child, with Budgie Hussain, senior lecturer in ultrasound at the University of Portsmouth

when millions of baby boomers retire in the next decade. IT has become a vital weapon in containing costs and US healthcare providers have become an important market for the IT industry - vividly demonstrated by the 650 IT vendors that exhibited at the annual conference of the US Healthcare Information and Management

Systems Society (HIMSS) in February. The event attracted 18,000 health IT professionals and is claimed to be largest of its kind.

According to a recent survey of HIMSS members, co-sponsored by IBM, the sector's increasing reliance on IT is driven principally by the need to make diagnostic services available in remote

locations - (telemedicine) - and to offer remote access to patient records. There is also a desire to gain more value from existing data - commonly called data mining - and integrate disparate systems following mergers.

The main priority for the healthcare organisations surveyed is recruiting and retaining high quality IT

staff. Nevertheless, almost one-third of respondents said lack of adequate financial support prevented their getting and retaining IT staff. Funding remains the root cause of the health sector's many ills, and the IT function unfortunately seems destined to continue suffering the consequences.

BIOINFORMATICS • By Tom Foremski

Boost for drug research

Biological data analysis involves number-crunching on a massive scale

With huge developments costs for creating new drugs and the phenomenal amount of data generated in mapping the human genome and the genomes of pathogens, it is not surprising that leading edge computer technologies are increasingly being applied to biological research in a fast expanding field known as bioinformatics.

Until about four years ago, the term was virtually unknown, but now it is the focus of big efforts by pharmaceutical companies, IT companies and government sponsored research projects aimed at applying the power of advanced computer systems to the challenges

facing drug development and genetic sequence matching.

The human genome project (see facing page) is largely responsible for the rise of bioinformatics. The human genome has about 100,000 genes containing about 3.5bn base pairs. With a goal of mapping numerous human genomes from different individuals and various environments, at different stages of the human life cycle, the databases required to hold such information quickly become enormous.

Add to that the research in modelling complex proteins and drugs, plus trying to match drug behaviours related to various genes, and a significant challenge

emerges in how to handle such massive amounts of data.

The challenge is not in storing the data but in analysing it, looking for various sequences, and combining data from different databases and across geographical areas.

This requires sophisticated pattern matching systems, data analysis tools, visual data mining tools and the development of specialised algorithms that can quickly process the data.

Researchers must also find effective ways of matching data within their own proprietary databases with publicly available databases such as the US-based Gen-

Bank and similar databases in Europe and Japan. GenBank, for example, contains data on several million DNA sequences collected from more than 18,000 species and receives tens of thousands of information requests on a daily basis.

The high cost of drug development and clinical testing is another factor driving bioinformatics growth. The US Office of Technology Assessment calculates that it costs more than \$350m to bring a new drug to market, a process that can take as long as 20 years. Shortening this time and reducing the total cost

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GENETIC RESEARCH: The Human Genome Project - By Nuala Moran

Crossing medical frontiers

Information technology is helping to locate common genes between humans and other organisms - even puffer fish and lowly worms

Genetics is about to revolutionise medicine, but to do this it must first harness the power of information technology.

Genetic research is generating such volumes of data that it has spawned its own specialised area of information management called bioinformatics. The main challenge faced by its practitioners is to manage the exponential growth of biological information and bring coherence to hundreds of databases worldwide which have different structures and nomenclatures.

One of the world's bioinformatics powerhouses, in terms both of generating and managing information, is the Wellcome Genome Campus in Cambridge.

This is home to three institutions - the Sanger Centre, the world's largest gene sequencing laboratory, the European Bioinformatics Institute and the Medical Research Council's Human Genome Mapping Resource Centre.

The Sanger Centre is one of the main contributors to the Human Genome Project, which aims to sequence and publish every one of the 100,000 human genes by 2002.

The largest undertaking in the history of biology, this involves determining the exact order of the 3bn

bases (chemical units) that make up the genetic code of each individual.

A liquid crystal display in the reception of the Sanger Centre provides a vivid demonstration of how rapidly genomics databases are growing. Across the screen flows a never-ending stream of letters representing newly sequenced human genes.

The automated sequencing process churns out DNA sequences at the rate of 50Mb per second, and at the end of each day this data is loaded on to the Human Genome Project's web site.

The project is an international effort, with the Sanger Centre having responsibility for a sixth of the total genome. With overlaps between genes, this will amount to 550m bases.

"We are working out the sequence of each gene, but we are not finding out in any sense what the genes do," says Dr John Sulston, director of the Sanger Centre.

"Sequencing is only the beginning, but it will underpin medical research for ever. It is the archive researchers will always refer to."

One of the best ways of establishing the function of the sequenced human genes is to look for the same sequence in so-called model organisms.

The centre hopes to complete the sequence of one such organism, the

worm *Caenorhabditis elegans*, this year. This lowly worm, a mere one millimetre long, has 100m bases in its genetic code. Many of its genes also occur in humans.

The same is true of another Sanger Centre subject, the puffer fish. Finding common genes, or homologues, between humans and other organisms is rapidly becoming one of the most powerful tools in medical research.

It is much easier to determine what protein a gene codes for, and what the function of the protein is, in worms or fish, than in humans.

It may seem unlikely, but *Caenorhabditis elegans* provides such a powerful tool for developing new drugs and diagnostics that a genomics company devoted to its study, Devgen of Ghent, Belgium, was set up at the beginning of this year. Similarly, Hexagen of Oxford specialises in mouse genomics.

"Comparison of the mouse genome with the human genome is like a searchlight," says Dr Sulston. "You can see regions of extreme similarity and others that are totally different."

"The similarities are functionally very important. In a genetic sense, we are just large mice. Most of the genes function in the same way."

"Comparative genomics is an extremely powerful tool. At the moment we are doing this crudely, but in the next ten years, techniques will be highly refined."

Next door, the European Bioinformatics Institute is developing these techniques. Dr Graham Cameron, head of services, is trying to ensure that biological data held on hundreds of publicly available databases can be compared.

The 100-strong group is responsible for collecting and managing gene sequences and other data such as protein structure and function, produced not just by the Sanger Centre but by academic groups worldwide.

The collection is growing at the rate of one new gene sequence every minute.

At present, EBI's databases cover 20,000 organisms. Forty per cent of the data is human, 33 per cent relates to *Caenorhabditis elegans* and 9.8 per cent to the mouse.

The institute exchanges data with its counterparts in Japan and the US every day. There are 100,000 hits to its web site each day, a seven-fold increase over 1996.

"Information integration is the challenge of the next decade. We know the sum of all this data is more than the parts, if we can pull it all together," says Dr Cameron.

At present, there is a significant lack of inter-operability between databases. This means that a researcher working on a gene in one organism would not be able to find the same gene in the database for another organism.

There have been international efforts to standardise nomenclature and



Laboratory technician at Theracys, the UK-based gene therapy company

database structures, but these move too slowly to keep up with the exponential growth in the volume of data and the number of databases.

In view of this, EBI is putting its effort into a more rigorous approach to designing databases. While relational databases have led to a substantial improvement in inter-operability, Dr Cameron is now looking to object-oriented programming to standardise the interfaces between databases.

"If we can get agreement on common interfaces, we don't have to deal with

what goes on inside the database," he explains.

EBI is spearheading a European effort to make databases inter-operate using the open industry standard, the Common Object Request Broker Architecture, (Cobra). "The aim is to create bridges between databases, even if they are radically different in structure and nomenclature."

The institute is also using Java to build tools which will give researchers a means of interrogating any database, regardless of its format.

BIOINFORMATICS

From facing page:

has large payoffs for pharmaceutical companies that makes it easy to justify expenditure on sophisticated bioinformatics systems.

With bioinformatics systems, researchers can analyse the genetic sequences of pathogens and help identify which drugs or types of drugs might be effective treatments, dramatically cutting down laboratory and expensive clinical trials which might lead to the development of miracle cures.

Silicon Graphics (SGI), the US computer systems company, is one of the leading providers of sophisticated computer systems for bioinformatics applications. "About two and a half years ago, we recognised that bioinformatics would

become a very important market and we began making major investments in this area," says Dr Jull Nash, biology market manager at SGI.

"Our systems were already being used for visual modelling applications at large pharmaceutical companies so it was a natural progression for us to move into bioinformatics. We work constantly with software developers and customers to try and understand their needs."

SGI systems use powerful MIPS microprocessors and proprietary technology to offer scalable high performance systems that can host demanding bioinformatics applications. The company

also offers specialised software tools use for data analysis. "Our Mininet data-mining tool, for example, helps researchers sift through enormous amounts of data. And with our visualisation tools, researchers can analyse their data quickly and much more effectively than in the past," adds Dr Nash.

In many ways, the needs of the bioinformatics community is similar to that of users in other IT areas, how to analyse large amounts of data and distribute that data within an organisation that may be spread across several different locations.

Internet-based technologies such as web servers and intranets play a big role in this process, another key

area of expertise for SGI.

"A typical bioinformatics system will consist of about three servers, one to hold the databases, a second to act as a backup system, since users require 24-hour availability, and a third to provide application support, connected to a large network to distribute the information," says Dr Nash.

With genetic databases doubling in size every 12 to 14 months, it is also important to be able to add computing resources easily without having to redesign or install new systems. SGI says that with its scalable systems it is relatively simple to expand a bioinformatics system.

Some companies in this

area are taking a more specialised approach. Paracel, the US-based company, for example, has developed special VLSI (very large scale integrated) chips that are specifically designed to process quickly genetic sequence matching.

Paracel's GeneMatcher system is described as a supercomputer for drug discovery applications, offering as much as 1,000 times the performance over traditional computer system applications.

"One of our VLSI chips has 48 processing cells, with each cell working as fast as a general purpose microprocessor - so by using such chips in multiple, parallel processing architectures, we

can offer very high performance," says Richard Diaphus, vice-president of engineering at Paracel.

"We've also developed sophisticated algorithms that further speed gene sequence matching operations."

With supercomputer performance, researchers using the GeneMatcher system are able not only to run their algorithms faster but they can run more of them, thus dramatically improving data analysis.

The result of such advances in bioinformatics will be not only the faster discovery of key drugs, but it will also reduce the price of the drugs, benefiting patients worldwide.



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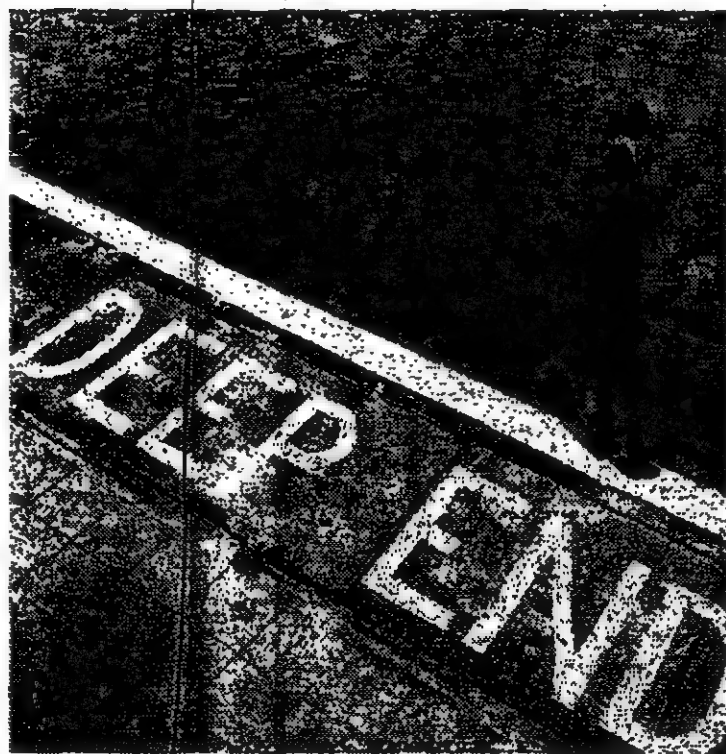
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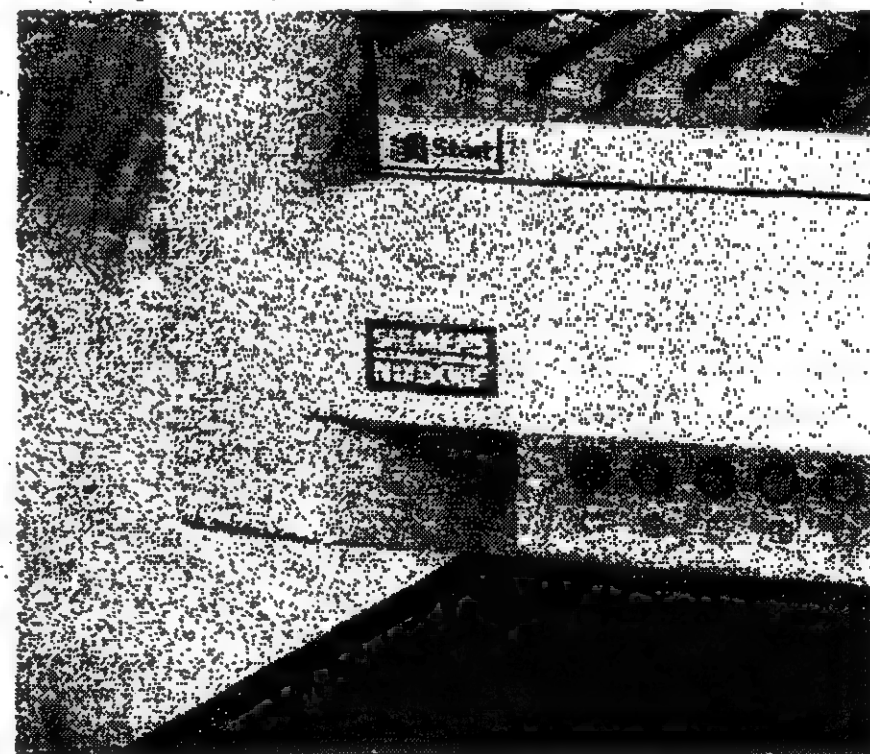
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6 MEDICAL APPLICATIONS

HOSPITAL COMMUNICATIONS • By Tom Foremski

IT offers a wealth of opportunities

Wireless networks are a key focus because they offer many advantages for healthcare organisations

Wireless networks and portable computing devices are finding a growing niche in healthcare systems, especially in the US where the healthcare sector is undergoing significant consolidation as hospitals seek to contain rising costs.

The US hospital communications market, which includes wireless technologies, is predicted to grow at a compound annual growth rate of 30 per cent between 1996 and 2003, by which time it will be valued at about \$2bn, according to the market research firm, Frost & Sullivan.

Much of the growth will be in wireless communications and video-conferencing systems. The main impetus for growth is to cut patient-care costs while at the same time improve patient-care as the baby boomer population ages and requires more healthcare services. Industry observers, however, warn that while good business opportunities abound, competition is fierce.

"Since the hospital indus-

try has many needs and is an ideal vertical market for many (IT) products, many companies are vying for leadership," says Frost & Sullivan senior analyst, Alpa Shah. "In addition, the limited monetary resources of this industry make it even more difficult for companies to compete for hospital budgets."

The availability of money is not the only issue. Many healthcare providers have antiquated IT systems. A recent survey by KPMG Consulting found that about 52 per cent of US healthcare providers and related organisations cited a lack of a technology infrastructure and the lack of implementing technologies as a key barrier to adopting new IT solutions.

This situation is rapidly changing and healthcare organisations are increasingly embarking on ambitious IT investments as they seek to take advantage of key developments such as wireless networks.

Wireless networks are a key focus because they offer

many advantages for healthcare organisations. Because these networks are wireless, they save considerable amounts of money simply due to the fact that there is no need to lay wires. And as the organisations' needs change, there is no need to rewire facilities to add new users.

Another key advantage of wireless networks is that medical staff can gain easy access to a patient's data even if they are located in an office as far away as three miles from the patient. And as they visit patients, they can update records, recommend medication and fill out paperwork at the patient's bedside, making it easier to consolidate data and reduce the risk from transcription errors.

Lucent Technologies, for example, offers its WaveLAN wireless network, which has found applications in several major hospitals. WaveLAN uses 'spread spectrum' technology which enables it to be used in a variety of settings with fewer problems of interference from building structures and items such as metal filing cabinets or microwave ovens.

Along with improvements in wireless networking tech-

nologies, there have been new developments on the client side, in terms of cheaper and more effective portable computing devices with wireless data links.

Wyse Technology, for example, offers its WinTerm 2930 portable computing device, which is a notebook sized computer weighing about 3.4 pounds with a colour LCD touch screen display. It supports Citrix Win-

Lack of funds and facilities hinders the adoption of new systems

Frames technology which gives users wireless access to Windows 95 and Windows NT based applications.

The WinTerm 2930 is being evaluated by several large healthcare organisations in pilot projects that could lead to big orders for Wyse.

"There are a number of interesting applications that customers are exploring for the 2930," says Roy Graham, senior vice president for sales and marketing at Wyse. "One of these is a

drug-cart application. When patients receive medicine, their records are updated. This makes the process more accurate plus it reduces the amount of medications that need to be stocked. We're working with several leading US and European pharmaceutical companies on such applications."

Wyse plans to improve the WinTerm 2930 later this year with additional models that feature a larger screen and include a keyboard.

Microsoft has also been encouraging the development of low-cost portable computer devices based on its Windows CE operating system and this is in turn, encouraging developers to offer Windows CE applications designed specifically for the healthcare industry.

For example, earlier this year, the US company, Proxim, introduced its RangeLAN2 wireless data network with support for handheld Windows CE based devices, providing users with a real time link to patient records via the popular Compendia electronic medical record system from Physix.

Proxim says that its wireless network system is installed in more than 300

healthcare centres worldwide. Providing support for Windows CE devices will also bring down costs since such devices are cheaper than Apple Computer's Newton MessagePad, which also runs Compendia, but is being phased out by Apple.

With RangeLAN2, customers can use a Windows CE based handheld computer to access a Microsoft NT server with an SQL-based patient database to gain access to patient records through industry-standard applications.

In the future, wireless networks may make it possible to hook up diagnostic equipment from the patient directly to a hospital's network, allowing doctors to check a patient's progress remotely, activating drug delivery mechanisms when needed. Such systems may also be used in the home extending a trend toward shorter hospital stays.

"The healthcare sector has traditionally been slow-moving at accepting new technologies. Most patient records are still paper-based," notes Mr Graham. "But it's changing - we see lots of opportunities and are excited at the progress of some of the pilot projects."

NETWORKS • By Alan Simpson

Farewell to data in cardboard file folders

Not so long ago, patient files were handed up into recycled cardboard folders and shuffled round interminable hospital corridors and wards.

Today, those folder delivery trollies are being replaced by high-technology systems. Patient's records are more likely to be delivered courtesy of a computer server and local screen than a porter or nurse.

While 'patient-flow' is being speeded-up, so, too, is data-flow - though there is still plenty of scope for faster implementation through-out many health administrations, according to Dr David Scott, an international health consultant.

"Much time will be saved when all European hospitals move from low bandwidth networks (more megabits than gigabits). Such network implementation will speed the transmission of patients' records, both within the hospital and out to the patient's local doctor - an essential factor, if electronic health

records are to be fully achieved."

Data traffic is the dominant driver of corporate broadband networks. By 2002, around 90 per cent of worldwide corporate traffic will be non-voice, compared with just 10 per cent in 1992. This rate is increasing with information flow in formats such as video, data, text, graphics and voice.

Jurgen Beer, of Bosch Telecom, says that liberalisation and technological advances are changing the structures of health telecoms more than ever. "The migration from conventional telecom networks to integrated networks with voice, video and data capabilities is exercising the minds of data operators round the world," he adds.

In the UK, the Royal Pharmaceutical Society (RPS) have no doubts about the benefits of high speed data networks - "the case for greater access to patient information is overwhelming."

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CASE STUDY: Rapid access to hospital data • By Geoffrey Wheelwright

Integrated system boosts efficiency

In a world where healthcare funding is increasingly under pressure, hospitals have to find the ways of squeezing the highest value out of every penny they receive. Finding better ways to manage documentation - and improve access to data - is becoming a key element in this struggle.

At Llandough Hospital and Community National Health Service Trust in the Welsh region of West Cardiff and the Vale of Glamorgan, both of these challenges are much in evidence. Llandough Hospital needed to find an IT system that would further improve patient service, provide better data access for doctors and nurses, maintain patient confidentiality and

release more bed-spaces by quickly identifying patients ready to go home.

All of this had to be achieved as an interim 're-fit' of the trust's computer system, which will soon be overhauled to investigate and solve the year 2000 computer date issue. According to Rhys Wyn Evans, the trust's director of information services, "we have to replace the main patient information system well in advance of the year 2000 and are considering the usual procurement routes."

Meanwhile, the trust needed an interim solution "that would allow us to increase the functionality of our systems at an affordable cost." The task of making this happen fell to Simon

Gillings, the project/systems manager at Llandough Hospital.

The key to this effort was finding a consistent and reliable method of integrating data from three very different sources - the hospital's pathology, radiology and patient-administration systems, he says.

Test results

"The aim was to find the best way of getting information from the trust's various reporting systems to the people who need it: the staff who are on the wards," says Mr Gillings. The trust wanted to give doctors swift access to pathology test results, thus speeding up decisions on treatment and patient-release.

To achieve this, the hospital implemented a system called 'Casablanca' from Gresham Computing, in January. The results have made a big difference, says Mr Evans. A key benefit is that Casablanca provides a single point of reference, at the treatment location, for three of the most important hospital systems.

It gives ward-based medical staff the most up-to-date patient information. Patients who are ready for discharge can be promptly released, thus helping to cut costs.

Before the time-saving system was installed, doctors needed to phone lab staff and write down research results. Pathology lab staff also had to phone-in results,

or fax them, in response to doctors' requests. Now, authorised healthcare staff can rapidly access the system, using a standard Webbrowser - in this case, Netscape Navigator. "Staff just fill in the information request form in a browser with patient's name and number," says Mr Gillings. "It is consistent across all three disciplines - radiology, pathology and patient administration."

In implementing the system, he had to ensure doctors' concerns about patient confidentiality and security were properly addressed. Once this was achieved, reaction to the Casablanca system "has been very, very favourable - better than I could have expected," he adds.



Staff at Llandough Hospital in Penarth, Wales, are trained on the new system that brings together data on pathology, radiology and patient-administration.

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CASE STUDY: Hospital wireless network • By Tom Foremski

'Little buddies' to the rescue

Nurses use computerised drug carts, linked to a wireless network – they nickname them 'little buddies'

The US wireless data network company, Proxim, has more than 300 installations of its Rangelan2 wireless network in healthcare organisations around the world. Using a spread spectrum technology, Rangelan2 systems offer a secure and reliable wireless network without requiring strong signal strength that might interfere with sensitive hospital equipment.

Although there have been documented cases of radio frequency devices such as cellular phones and other communications equipment interfering with electric wheel chairs, heart pacemakers and medical monitoring equipment, Proxim says that it has had no reported incidents of its Rangelan2 system affecting any hospital equipment, and its wireless networks are sometimes used in sensitive environments such as intensive care units.

With spread spectrum technology, the Rangelan2 transmitting devices use

about 0.1 watt and by transmitting across a wide spectrum and changing frequencies every 0.2 seconds, it minimises the chances of interference at a specific frequency. Proxim says that a portable cellular phone can generate 10,000 times the signal strength of its transmitters.

St. Joseph Hospital, located in Denver, Colorado, selected Proxim's Rangelan2 system to help manage its operating costs and improve patient care. The obvious benefit of wireless local area network (LAN) technology was the cost-savings of not having to purchase, install, network and maintain a huge number of PCs. But the advantage goes far beyond just the initial equipment cost. Entering information directly into the network reduces the time nurses spend re-entering handwritten information into a central terminal, and reduces the chance of transcription errors, says Douglas Hahn, manager of information services at St. Joseph's.

As a managed healthcare hospital, St. Joseph's has to perform a wide variety of patient procedures at a pre-defined cost, often for less money than it used to charge, forcing it to look for ways to do the same job as effectively but at a lower cost.

The 100-year-old hospital decided it would use technologies such as Rangelan2 to bring IT closer to the point-of-care. The initial goal was to allow nurses to directly input data into the hospital network from the patient's bedside. With 600 beds, the hospital decided to replace a mainframe based network with Ethernet-based local area networks and place PCs in each hospital room.

On closer analysis, the hospital's IT staff realised that although this plan would provide nurses with bedside access to patient data, it would be extremely expensive and disruptive to hospital operations to install network cables, especially in an older building, and also install large numbers of PCs.

Using dumb terminals would save money on desktop PCs, but it would limit the effectiveness of the system since nurses needed access to PC-based applications and the mainframe database. And there were concerns that the fan noise from PCs would disturb patients and leave the unattended PC open to tampering, raising security and legal liability issues.

The solution was to develop a special nurses' cart to contain medical supplies and carry an NEC

laptop computer equipped with a Rangelan2 PCMCIA wireless LAN adapter. Fifty carts were made and equipped with NEC laptop computers which hospital staff nicknamed "little buddies." The wireless network consists of ten Rangelan2 access points distributed throughout the building.

Using a special software application, nurses input patient information into the portable computer, which transmits data to the hospital mainframe, replacing the previous method of using paper records which were later entered into the mainframe computer.

And since the portable computers are never left unattended, there is less of a security issue. For example, there was a case in a Florida hospital where someone gained access to a stand-alone PC in an AIDS ward and published confidential patient information on the Internet.

"Although there is often resistance to new technology, we were able to quickly set up the system, so it wasn't a burden to the nurses. It has been very successful," says Mr Hahn.

The hospital plans to extend the wireless network to other departments including linking surgery rooms.

AWARD-WINNING PRESCRIPTION SYSTEM • By John Kavanagh

Enthusiasm abounds

UK project streamlines the world's largest prescriptions database

England's Prescription Pricing Authority is all about big numbers. It has 1,000 data entry staff keying in the details of every National Health Service (NHS) prescription dispensed by any pharmacy. This amounts to around 2.5m items every day, or well over 500m a year, worth a total of £4.5m.

The trouble is that this means equally large amounts of information are potentially available to doctors, pharmacists and NHS managers. The authority has the biggest prescribing information database in the world, an IBM DB2 database providing 1.8m records for analysis.

As a result, general medical practitioners have been getting quarterly reports running to 500 pages or more on all the drugs they have prescribed. They have also been sent monthly budget statements.

"Like most busy professionals, GPs have a limited amount of time to do detailed analysis of paper information – and information in this form does not easily enable trend analysis and comparisons between colleagues or peers," says Stuart Lynn, who last year led a project to make the information available electronically.

"Such analysis could be significant: if it reduced medication costs by just 1 per cent this could represent a saving of £50m to the NHS."

The project aims fell into two broad categories:

□ The team wanted to make a system which was easy to use and provided timely access to information on their own prescribing, and helped them use their time more effectively. The simple access has been provided through the use of Microsoft Windows.

□ The second category of aims related to costs. "The system was to help doctors choose the most cost-effective medication for their patients without detriment to patient care," Mr Lynn says. "It would help them manage, audit and review their prescribing habits to help them both monitor the use of new and expensive drugs and also establish best practice and monitor

their compliance."

Mr Lynn's team used the Prince project management method, a structured development method and both rapid application development, and object-oriented techniques, working initially with a group of users to confirm the requirements.

Growing numbers of doctors are now being brought on to the system, mostly dialling in through modems, with a few having fast digital and tabular formats.

GPs not only can do such analyses: they are actually doing them. This is partly thanks to the preparation done before the launch.

A pilot system was set up with 36 practices. Its use was closely monitored and the facilities were amended as necessary. In addition, an independent evaluation of the use of the system was commissioned from Liverpool University.

"This evaluation showed

lighted variations in prescribing practice among GPs in the same practice."

Doctors confirm these findings. Dr David Kernick in Exeter, who described his practice's response as "ecstatic", says the system altered prescribing habits, in particular by highlighting the large number of angina sufferers who were being given pain killers, when aspirin was enough.

Dr David Lyon in Runcorn uses the analysis to go even further. "We used the system with our computerised patient records to identify people suffering from particular conditions," he says. As a result, specialist clinics led by nurses have been set up for rheumatoid arthritis sufferers, and GPs have been saved the time of organising blood tests and monitoring drugs: this is now done by nurses working to an agreed protocol developed by the GPs and local consultants.

The system has been taken up by 100 health authorities and by the NHS Executive, and is being continually rolled-out to local practices.

The large numbers involved here are creating some problems of installation, support and maintenance. Mr Lynn's team is therefore looking at providing the information online across an intranet, run over the NHS network, rather than getting users to dial in and retrieve their databases from the central system.

The intranet approach would mean users would simply need Internet browser software and even so-called "thin client" devices such as cheaper, stripped-down network PCs.

The project team was rewarded for the success of the system when it won a medal in the UK's prestige IT Awards, run by the British Computer Society, to publicly recognise excellence. But perhaps the team's greatest reward has come from the enthusiasm of the users. "The more we use the system, the more things we think of to use it for," says Dr Lyon in Runcorn. "It's just snowballing."

Such comments are the highest praise for any system developer.



With the help of electronic information, medical teams can now select the most cost-effective medication for patients

PHARMACEUTICALS • By Jola Shillingford

Software opens the door for drug discoveries

Rising computer power speeds up the progress of pharmaceutical research

What do cheminformatics and bioinformatics have in common? Both help pharmaceutical companies discover new drugs. And both rely heavily on information technology.

Bioinformatics (see report on page four) is the application of IT to all aspects of molecular-biology based research, explains Chris Rawlings, UK director of bioinformatics at SmithKline Beecham Pharmaceuticals. "It sits at the border between computer science and molecular biology."

One use of bioinformatics is to gain meaningful information about the way genes work from the vast quantities of data coming out of the publicly-funded human genome project (see page five) and other public and private databases.

The information, especially on gene markers which indicate disease, can then be used to develop new drugs. Another use of bioinformatics is to analyse protein sequences.

A gene that carries out a given function will vary slightly from one person to another, so software is needed to find very similar genes. Genes are represented as strings of characters (letters), so software based on spelling checkers that can search for character strings plays a big role in bioinformatics.

Software

Also key to bioinformatics is software based on continuous speech recognition technology. Originally designed to recognise similar pronunciations of sounds, academics recognised that this could be adapted to search for similar gene sequences.

This is because continuous speech recognition software involves the use of complex algorithms, known as hidden Markov models, that can provide a useful statistical model of a complex gene-sequence-protein pattern.

Software is also needed to cluster similar genes, so that the genes that are the most different from the others will stand out," says Tony Wilkerson, head of the biomolecular design group at Zeneca Pharmaceuticals in the UK.

"We're using a lot of techniques to find out the genes role," comments Mr Rawlings. "It's almost theoretical biology. For example, we're using computers in the early stages of identifying the molecules within a cell that we want to target. And we use specialist database techniques to compare new data with what is already known. There are many years of data on known genes."

There is a close link

between bioinformatics and cheminformatics (or chemoinformatics). Once a pharmaceutical company has identified a protein within a target molecule it wants to inhibit in order to cure a disease, it needs the right combination of chemicals.

Cheminformatics is the application of some of the newer technologies to what is known as combinatorial chemistry, based on the assumption that the greater the variety of chemical compounds tested, the greater the chance of finding one that can be developed into a new drug.

It involves building up lots of different combinations of chemical compounds – taking a variety of starting points. As with bioinformatics it involves processing huge amounts of data.

Dr Philip Loftus, director of global R&D at Glaxo Wellcome, says: "Increasingly, it is possible to predict the properties of compounds without actually making them. By using computing power similar to that needed to model oil fields or weather patterns, we can look at large numbers of compounds that bind only weakly to their target, and then determine the characteristics that a better drug will need."

The company has introduced parallel screening, where hundreds of compounds are evaluated in parallel using rapid, predictive tests. Typically these tests look at the potency of the candidate drugs, their selectivity for their target, how they are absorbed and metabolised, their tissue penetration and their potential carcinogenicity.

For example, in a Glaxo obesity project, large combinatorial chemistry libraries were screened and smaller, focused libraries generated around the most interesting hits. Then 120 compounds were evaluated in parallel and one selected. This took 40 'chemist-weeks' and four biologist-weeks as opposed to the 600 scientist-weeks it would have taken under previous methods.

Typically, such tests involve serious number crunching because compounds and their behaviour are usually represented mathematically.

However, Mike Hann, a biomolecular expert, at Glaxo Wellcome, says virtual reality is useful in cheminformatics, too, because chemical compounds have a handedness (that is, like humans one side is identical to the other). By wearing goggles and viewing them in three dimensions it is possible to get a better understanding of how they work.

Glaxo also uses 3-D modelling software from US workstation company Silicon Graphics. Mr Hann says the UK computational science department alone spends £2m-£3m a year on software and computing equipment.

Pharmaceutical companies tend to use a combination of off-the-shelf software, customised packaged software, and software designed in house. "Because we're researchers coming up with new ideas, we often find that what we want to try can't be done with a commercial package," says Mr Hann.

"But a few years down the line, packaged software that does the same thing will be available commercially."

Lots of IT and software houses have sprung up to serve the bioinformatics and/or cheminformatics needs. They include UK-based companies Oxford Molecular and Chemical Design and US companies Molecular Simulations, Daylight Chemical Information Systems, Molecular Design (MDL) and Tripos.

Academic links

Many of the companies that exist have been set up by former academics and tend to retain close links with university research departments. In fact, both bioinformatics and cheminformatics were originally university disciplines, but have become far more popular in the last five years.

The end-result of the drug discovery phase is to pro-

duce a large number of new drug candidates. "The rapid rise in computer processing speeds has reved up the front-end of discovery," says Mr Rawlings. "It has led to an exponential increase in the number of new drug candidates."

IT is also proving useful – in the form of decision support software – to help pharmaceutical companies choose between them.

"In bioinformatics, the first new products are likely to be in the area of diagnostic products that detect the genetic markers that indicate various diseases," says Mr Rawlings.

"Genetic markers may even be able to indicate the likely side effects of a drug given to a person with a particular genetic makeup. The goal is targeted health care."

Cheminformatics is likely to improve drug discovery by increasing the efficiency with which new leads are generated, optimising previously identified leads and finding new target molecules.

Dr James Nield of Glaxo Wellcome believes that this is the third generation of pharmaceuticals R&D, "in which we are using genetics, robots, computers and miniaturisation, to move to a more predictive phase."

HOSPITAL NETWORKS

Improved way to manage resources

From facing page:

ing," says the society. Access to full medical records on a need-to-know basis is fundamental to the future development of the health service, the society believes.

Meanwhile, the linking of pharmacists and other health professionals in the UK to an electronic network – the NHS-net – is vital, says the RPS.

For hospital doctors, the benefits of data network benefits can be easily demonstrated, says Pinder, Computers which supplies more than 300 hospitals and healthcare centres worldwide. These systems help provide faster and more accurate diagnosis, plus rapid access to patient records.

According to ID3, a leading US provider of IT systems to the healthcare industry, data networks are essential to efficient hospital management – for tasks involving contracts, the tracking of benefits, adjudication of claims, and the supply of rapid information to the point-of-care.

Data networks also have a key role to play in clinical measurements, an area where companies such as Hewlett-Packard providing patient-monitoring systems. HP systems can involve up to 500 connectivity devices

being used to route clinical data round a hospital system.

Electronic mail services and intranets (private networks, based on Internet technology) are becoming increasingly important in the medical world. In the UK, for example, Pinderfields and Pontefract hospitals in Wakefield, has installed an intranet, running on the BT data network, NHS-net.

Enter Kidd, head of IT at Pinderfields and Pontefract hospitals, says that the hospital trust launched an initiative to publish medical text and graphics on the hospital network, even before the term 'intranet' was coined.

The system has since evolved, bringing an array of improvements to all hospital departments. For example:

□ Business managers are now able to monitor resources more efficiently, especially in the key areas of bed-availability and waiting lists.

□ Clinicians share medical papers, ensuring patient care is fully up-to-date.

□ E-mail enables consultants and medical researchers to share the latest medical developments around the world. For example, a trust consultant in plastic surgery is using the facility to work alongside a medical team in South Africa.

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WORKING TO YOUR ADVANTAGE

DEFUSING THE MILLENNIUM BOMB By Jola Shillingford

Shortage of time and money

Computer systems in healthcare are heavily date-dependent – and many may not work beyond the year 2000

Many hospitals around the world face two significant problems in dealing with the year 2000 computer date problem – the first is time, the second is money.

In the UK, the National Health Service is no exception in this race to defuse the so-called 'millennium bomb'.

The year 2000 issue affects a whole range of healthcare systems from accounting software and patient waiting lists to mission-critical systems with embedded chips, such as heart-monitoring equipment.

In the US, IT researchers at the Gartner Group estimate the global cost of solving the year 2000 problem (sometimes referred to as the Y2K issue) could be between

\$400bn and \$600bn. "National Health Service hospitals have been asked to submit budgets for fixing the date problem by the end of March – and to fix any really important items by the end of the year," says Robin Guenier, executive director of the not-for-profit body Taskforce 2000.

At the time of writing, no NHS budgets had been received.

But when budgets are put together, there is still the problem of where the resources are to come from to fix the systems.

Meanwhile, Frank Dobson, the UK health minister, has urged hospitals to press on with fixing the year 2000 problem. But at the time of writing there has been no mention of extra money.

The year 2000 problem

affects software written with a two-digit date field – for example, '95' for 1995. But at midnight on December 31, 1999, when the digital clock hits '00' for the year 2000, computers may not recognise the date – and crash.

There are even embedded chips in some lifts that will not work after the year 2000. And whereas in a small office block, staff might be able to use the stairs, in hospitals, if lifts do not work, patients cannot be moved to the operating theatres in time.

The Department of Health's Medical Devices Agency warned NHS hospital trusts in an internal executive summary last year that "as with other risks, prioritisation is needed for sorting out the millennium 'bomb', having due regard for competing demands."

What this means is that fixing monitoring equipment, such as kidney dialysis machines and intensive

care cots, is likely to win priority over lifts and administrative software. Professor Mike Smith of London's St Bartholomew's Hospital warned last year that between 600 and 1,500 people could die as a result of an expected 10 per cent failure of health service equipment in the year 2000.

"Time is tight, resources are thin – and we're approaching an emergency," says Robin Guenier

It is not yet known how much money is needed to fix NHS systems. However, Mr Guenier says that in the private sector "all the indications are that remedying year 2000 problems will cost £1,000 to £3,000 per employee."

A Cap Gemini survey has confirmed this putting the average cost per head at £1,950. Looking at what large private-sector organisations

will be spending, Unilever has allocated £250m-£300m to defusing the 'bomb'. Britain's top four clearing banks, including Barclays, will together spend around £1bn, according to Mr Guenier.

By contrast, the public sector is planning to spend less than £1bn to fix its millennium

problems, a figure Cap Gemini sees as a huge underestimate. Public sector organisations are spending about £400 per employee. Mr Guenier says the health service alone employs 750,000 – and using £400 as a rule of thumb, it would need an extra £300m. Worse still, the money should really be found and spent in the next 12 months.

It is even possible that

once the sums are done, solving the NHS's year 2000 issues will turn out to be as expensive as fixing private sector ones, or more so. This is because many NHS systems, such as those for patient booking, are based on proprietary technology.

Some experts believe the real cost of defusing the millennium bomb for the NHS will be closer to £1.4bn, a view shared by Mr Guenier. The situation could be particularly difficult, he adds, because there is no commonality of systems in the NHS. Local areas have used their own initiative, so some may be using software produced by local companies that no longer exist.

It is also possible that some of the IT disciplines imposed on the management of systems may not be as rigorous as, say, in some of the bigger banks which have more money to spend on IT.

"Allocating scarce NHS resources to fix the problem will require very good management. I'm not sure if the NHS has enough managers who are up to it," says Mr Guenier. There are, of course, private sector consultants, but these are becoming "enormously expensive

The Millennium Bomb

Jan 1 2000

640 days to go

due to heavy private sector demand for help with the millennium bomb."

Moreover, many of them are already booked up way in advance. Mr Guenier says: "A year ago, I warned Margaret Beckett, the new

Minister of Health, that no one was going to thank the Labour government if the City of London scooped up most of the IT resources and patients suffered. The problem is that even if government allocates more money to fixing NHS millennium problems, it may be difficult to find the resources.

"I'm not sure what the answer is," he says. "There's a glimmering sense that the government is becoming aware of the problem. But it is time for them to start coming up with ideas."

This week, Don Crunkshank, Action 2000 chairman, held a meeting of change experts from public

infrastructure services to draw up national contingency plans. Experts included representatives from the health and emergency services.

"The possibility that NHS systems won't be compliant on time, is perhaps more disturbing than any other impact of the millennium bomb," comments Mr Guenier. "So many people depend on the NHS."

"Many NHS systems just won't work after the year 2000. And so many of its systems are heavily date-dependent. They include the birth dates of patients, when they are due for treatment, when they are due for another dose of a particular drug, when the stock in hospital stores needs replenishing, ambulance scheduling systems, and so on."

"Time is tight, resources are thin – and we're approaching an emergency."

HEALTH INFORMATION ON THE INTERNET By Jola Shillingford

From the poignant to the banal

Although support groups abound in cyberspace, the Web is no substitute for seeing a doctor

There is a wealth of health information on the Internet – mostly free. For example, you can obtain the latest Reuters medical headlines on the search directory Yahoo. Or e-mail questions to Dr Andrew Weill or even to the well-known sex therapist, Dr Ruth Westheimer.

Information ranges from the fascinating – for example, should you be worried about your health if you pass out during orgasm (Dr Ruth's site) – to the banal: What is male pattern baldness? There's a *Complete Home Medical Guide* published by Columbia University College of Physicians and Surgeons, which is fairly straightforward and an entire site dedicated to children's health, *KidsHealth*, with information provided by paediatric experts at the Nemours Foundation in Philadelphia.

There are also sites – including Dr Andrew Weill's – where you can find out about nutrition or order vitamins. Another site has a schedule of talks where you can send

online questions on specified topics. For example, at 8pm Pacific time one evening, a so-called 'wellness expert' will be online. Another day there will be a physician, and so on.

Then there are sites for medical professionals, such as the *Doctor's Guide to the Internet*, which trawls the Internet for useful medical sites and gives details of new medical news and conferences.

The Net has several pluses for health nuts and patients. First, if you are too shy to ask your doctor something, you could always look it up on the Internet – or send in a question by electronic mail. If you are too shy to send an e-mail, you can still look at transcripts of previous question-and-answer sessions.

Second, you can look at information that is usually only available to doctors. You can also obtain anecdotal information from newsgroups and support groups about others' experiences with particular treatments.

There are a large number of support groups on the Internet: a trip to *support-group.com* provides an alphabetical list of groups for almost every disease.

A visit to a support bulletin board will reveal how many new messages have been 'posted' within a given

timeframe, so it is easy to discover how active the group has become.

Some entries in the cancer support groups are poignant, but could be helpful: for example, one woman who had been through breast reconstruction surgery was offering to discuss it with another, who was thinking of having the operation.

And, in one of the asthma support groups, another Internet user was recommending bee pollen as a cure.

Not everyone finds these groups helpful, though. In fact, gathering health and support information on the Net does have some pitfalls. Furthermore, the Internet is not that secure, so users

should bear in mind that they may be leaving a trail of their health interests behind, with web site owners. This may not matter. But, on the other hand, if they are researching an obscure sexual disease, web users may want to keep that fact to themselves.

Posting questions in support groups may also involve revealing very private information, which can be read by millions. One way round this might be to pay for an extra mailbox and use an alias.

Finally, health information on the Net is not necessarily reliable. And even reputable sites warn that reading their information is no substitute for seeing a doctor. "There's a lot of junk on the Net, too, and a lot of staff parading as objective information," says Lynne McTaggart, editor of the newsletter *What Doctors Don't Tell You*.

One factor to consider when looking at information, is who is sponsoring it. For example, if a site is sponsored by vitamin suppliers, its nutritional advice may involve recommending lots of vitamin pills.

Similarly, someone recommending a prescription drug in a support group, could be from a drug company. Still, there are checks you can do: for example, most web sites have an 'About Us' section, which tells you about the site's owners.

If you are seriously thinking about following the advice on the web, you could also check any phone numbers listed on it.

Eventually, more health sites will start charging – so the Net is worth a look while the information is free. "There are some marvellous self-help groups," says Ms Taggart. "And groups sometimes form around a medical disaster, such as arachnoiditis, (caused by a spinal X-ray dye)."

The Internet is subversive, too, she adds. "It's information by patients for patients against the medical establishment."

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CD-ROMS IN NURSING: Case study By Mark Vernon

High scores for the sharing of knowledge

Easy-to-use CD-Roms offer valuable advice in the care of cancer patients

A little over a year ago, the Royal College of Nursing's Cancer Nursing Society in the UK took the unique step of awarding an IT project for an initiative in cancer nursing education.

The project went to David Brighton, a nurse ward manager, for the development of 'HCT chemotherapy help for windows', a CD-Rom prototype offering information for nurses in palliative care.

"The concept so impressed the practice development group of senior nurses at the Royal Marsden Hospital that the product is now being developed," says Dr Jane Mallett, research and practice development manager at the hospital which specialises in oncology.

In its present form, the prototype runs as a help-file database with users able to navigate its content via hypertext links. The opening page lists topic headings, which lead to subjects including types of chemotherapy, cell biology, cancer and drug action, plus treatment for nausea, vomiting and medical side effects.

"CD-Roms are potentially an extremely valuable means of presenting information for practical use," explains Mr Brighton. "In terms of sharing knowledge, they can be much more efficient than reference books."

Intuitive search engines and well-structured links between material is one aspect – but they really come into their own with multimedia information: video clips can be used for

demonstrating procedures: images can display symptoms or adverse reactions; dynamic illustrations can explain how drugs work.

Partly for these reasons, CD-Roms are not new to medicine, with current publications ranging from electronic textbooks to medical databases, though resources for use in hospitals are more rare than those for use by doctors.

CD-Roms do, however, find a good fit with the levels of technology typically available in hospitals. "The Internet or an intranet is not an option, partly because it is only rarely available on the ward, but also because it is difficult to control information upon which lives could depend. But wards are now often equipped with PCs – and CD-Roms are easy to use. People can be taught to use CD-Roms in the same way as they use reference books," says Dr Mallett.

Various uses for the technology in the future might include patient education and ambulatory nursing in the community. "It is increasingly recognised that patients can be involved in making decisions about their care – choices which can only be improved when they are better informed. And as more palliative care takes place outside of hospitals, CD-Roms might prove convenient resources for many people," comments Mr Brighton.

To fully exploit the medium, several factors must be emphasised – issues highlighted in Mr Brighton's project. The product came into being because of a series of timely coincidences: he has expertise in chemotherapy, including professional knowledge and practical

issues. To this, he also brought an interest in computers and a familiarity with the ways of presenting information on screen.

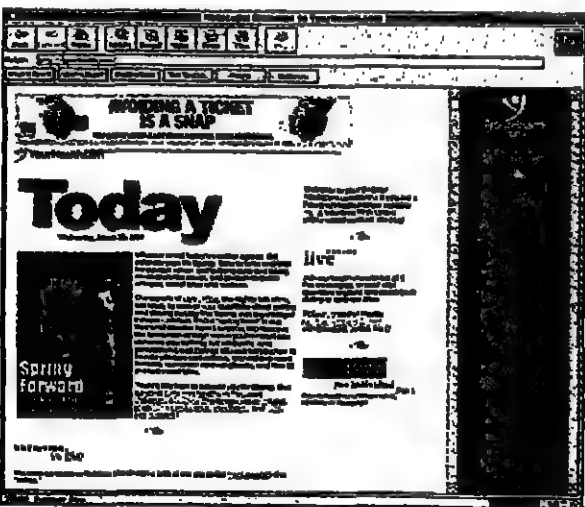
In the young world of online publishing, where the effectiveness of formats is tested largely by trial and error, innovative design is key. Developing the product for publication will be a lengthy process, taking up to two years, because the project requires interdisciplinary involvement.

On the one hand, much of the value of the medium comes from its closeness to the expertise found in the hospital, which in this case could include 15 specialists. In chemotherapy, much can be gained from good access to leaders in the field.

On the other hand, the product must be justified commercially in order to be published and distributed. This can be problematic because CD-Roms are not generally viable without the support of an accompanying book, requiring a 'mix' of media, which can compromise both.

Hospitals are often enthusiastic about innovation, however. The culture is one in which people are both used to dealing with new ideas and prepared to put in the time to develop them.

Communication between specialists, another key element in healthcare, is already greatly aided by modern IT systems. It would not, for example, be beyond the bounds of possibility to see a CD-Rom complete with e-mail links. However, as Dr Mallett points out: "The Royal Marsden NHS Trust's *Manual of Clinical Nursing Practice* is accessed by up to half a million people. If you put just one manual online, the authors could be overwhelmed with queries."



Questions answered on YourHealth.com – see panel, right

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EMERGENCY SERVICES • By Geoffrey Naim

Issues of life and death

Research is intensifying into emergency medical services which have to cope with multiple computer networks and varying workloads

The "mission-critical" epithet is much abused by the IT industry, but health emergency systems truly deserve the tag as their effectiveness can literally mean the difference between life and death.

This point was vividly demonstrated by the London Ambulance Service whose problems in getting a computerised dispatching system to work effectively in 1992 have entered the text books as a case study in how not to manage a complex IT project.

The system - at that time - was poorly tested and beset by bugs with the tragic result that some ambulances arrived late and emergency calls from the public went unanswered.

One fateful night, the system stopped working completely and dispatchers had to revert to a manual paper-based system. Critics of the project claimed lives were lost due to the delays, but this was never proved.

Happily, however, the problems were overcome, and, in a remarkable turnaround, the London Ambulance Service went on to win the coveted Information System Management Award from the British Computer Society, last year.

The earlier problems experienced with the London Ambulance system

were perhaps extreme but they highlight the challenges in building health emergency systems that have to work with different computers and data sources and cope with varying workloads.

The critical nature of emergency services imposes exacting requirements on the technology. Dispatchers need instant access to multiple phone lines, the system must work with zero downtime and it must deliver an immediate response.

For one Australian IT supplier, Trade Wind Communications, this description sounded similar to that of financial dealing room technology, a market where it claims extensive experience. The company has thus adapted its dealing room technology to the needs of the emergency services market.

TWC recently signed contracts to provide the Australian Ambulance Service and Fire Brigade with digital voice communication and paging callout systems for the New South Wales region.

The bigger IT vendors have also spotted the potential of the emergency services market. Intergraph, the US supplier of sophisticated graphics software, has created a division, Intergraph Public Safety, specifically to

focus on this business. The US city of Memphis recently selected Intergraph Public Safety to provide a \$2.5m computer-aided dispatch system for an area covering 327 sq miles and serving more than 600,000 people.

The dispatch system comprises various specialised subsystems to handle interactive mapping, dispatching, records management and communications. It links to a database that includes geographic and address information as well as providing incident history and traffic pattern data.

Based on Microsoft's Windows NT operating system, the Intergraph system runs on powerful PC workstations and uses symmetrical multiprocessing technology to handle the high transaction volumes. Better emergency management is one of the key points of the European Commission's health telematics research programme. The Hector project, in particular, involves more than 50 healthcare providers and IT suppliers and aims to demonstrate the advantages of using wireless networks to co-ordinate emergency healthcare.

The project has 11 pilot sites across Europe, one of which is the Lancashire Ambulance Service in northern England. Its system uses wireless network technology to transmit live pictures from the scene of an emergency to hospital doctors who can

advise the paramedics on life-saving treatment and save precious time in treating patients when they arrive at the hospital. The system is also used to transmit electrocardiogram (ECG) data to the hospital.

"Doctors can get detailed information about a patient's heart before the patient is wheeled through the door," says Martin Collier, IT manager for the ambulance service.

The Lancashire trial started in 1997 using one ambulance and three cameras. Two are fixed on the outside of the vehicle to give hospital staff a bird's eye view of a serious road accident, for example, while a third movable camera is mounted inside to relay images of the patient. It has a zoom lens that produces images "so close that you can see the hairs on the back of a hand," says Mr Collier. The trial has since been expanded with a fourth miniature camera mounted on a paramedic's helmet and connected via wireless link to the ambulance.

This allows the paramedic to roam away from the vehicle and transmit images of accident victims trapped inside vehicles, for example. The images from the four cameras are relayed simultaneously over a GSM phone link using "slow-scan" transmission to reduce bandwidth requirements.

The present generation of GSM networks can only handle 9,600 bits a second, which is insufficient for real-time moving images. The



This mobile data terminal from Xyratex offers instant, secure access to critical data, such as medical records, for West Yorkshire Ambulance Services

slow-scan system saves bandwidth by sending a series of still images once every four seconds and only those parts of the picture that actually change are transmitted.

Mr Collier believes the slow-scan system is ideal for this application. "Doctors prefer still pictures as they are less distracting on the eye," he says.

The high-tech ambulance and its roving camera-equipped paramedic made the headlines in the UK when the vehicle was unveiled last year, but Mr Collier admits the ambulance has not yet had a chance to put the technology to the test in a real emergency. "It is aimed at major incidents and is not really that useful for everyday call-outs," he says.

The ability to transmit remotely ECG

data is more useful, he believes, as the ambulance is equipped with the same sophisticated 12-lead ECG monitoring technology as hospitals use. Hospital staff no longer have to spend 10-15 minutes taking ECGs when an ambulance patient arrives at the hospital because the data has already been transmitted.

The Lancashire Ambulance Service hopes to install the wireless system in three or four ambulances and believes the project could be extended to other countries with GSM coverage. It has done tests in which cameras on a car travelling on a motorway in Lancashire transmitted images to a laptop computer in Milan, Italy.

*British Computer Society awards: see details, page 10

MEDICAL RECORDS • By Jola Shillingford

New rules soon on sensitive data

Patients in Europe will have wider grounds for compensation, if data protection regulations are breached

How safe are your medical records? Under the law, only as safe as the information companies keep on customers. But this could be about to change as a new Data Protection Bill goes through parliament.

The bill, which is necessary to introduce the European Union Data Protection Directive to the UK, is likely to be passed before Parliament rises for the summer, according to Dr John Wouds, director of operations at the Office of the Data Protection Registrar.

It introduces new rules for sensitive data, such as medical, political or religious information about individuals. These rules prevent data being processed without the person's consent, unless processing is necessary to protect vital interests of the

patient. Similarly, personal details cannot be disclosed to a third party without the individual's explicit consent.

Processing must also be "necessary for medical purposes and undertaken by a health professional or a person who... owes a duty of confidentiality which is equivalent to that which would arise if that person were a health professional."

Patients will continue to have the right to see their medical records except in cases, such as mental illness, where this information might damage their well-being. Organised manual data, such as index cards, also comes within the scope of the Act for the first time.

In addition, sensitive data can only be processed by a health professional in connection with his/her employment. When passed, the Act will also give people the right to claim compensation where a data controller has contravened certain requirements of the Act.

"It will extend the rights of individuals," says Dr Wouds. "At present, they can sometimes claim compensation for breaches of the 1984 Data Protection Act, but under the new Act the grounds for contravention will be much wider."

Dr Wouds says: "Bringing in the new rules should not cause any great difficulty for the health service because

doctors have strict professional and ethical rules on patient confidentiality. The Department of Health also issues guidelines."

However, the Bill has a number of implications for healthcare computer systems. Brian Enderby, manager of healthcare systems at Bull, says a combination of the Data Protection Bill and the move towards sharing health information (between GPs, hospitals and community services) is raising concerns about security.

"A balance needs to be struck between providing access to healthcare information and restricting particular data to just those

staff who need to see it. The Bill could have implications for historic patient records, which are starting to be used in expert systems to aid clinical decision-making."

There are ways of making information available from many locations - but only on a need-to-know basis. One possibility is to issue clinicians with credit-card sized smartcards, which they need to insert into a device beside PCs to gain access.

"There's quite a lot of interest from clinicians in this," says Mr Enderby. Another option is for patients to keep their own information on a smartcard. "When this was tried out in the CareCard Department of

Health trial about a 10 years ago," he adds, "many patients chose to go on using their CareCards at the doctor or pharmacy."

Data was held exclusively on the patient's card and patients were less likely to lose them than their credit cards. But general practitioners said they could not really measure the benefits of the card unless most patients used them.

The problem of better data access in the National Health Service needs to be solved first, says Mr Enderby. "Often data from the laboratory, the radiology department and so on is not pulled together in one place. When this happens, the

focus on security will increase."

In the US, an innovative network, Careweb, uses intranet (private Internet) technology to link information from six hospitals in the Boston area. Immediate access to patient files is available, whichever hospital the patient enters.

But data is protected from both internal and external breaches because authorised medical staff cannot get into the system unless they key in not only a password, but also a random number generated by a credit-card sized SecurID device from the US company Security Dynamics. This number changes every

60 seconds. Data is also encrypted as it is sent back and forwards from the server computer.

The project, spearheaded by Dr John Halamka of Beth Israel Hospital in Boston, cost less than \$50,000. It discourages inappropriate access to patient records from within because while users are online, an audit trail logs all accesses to data including time, date, details accessed and the user's ID.

The integrity of the medical profession is not in doubt. But as the new Data Protection Bill looms, doctors who already send sensitive patient information via public e-mail services, should make sure that adequate security (e.g. encryption) is in place. Standard e-mail systems, especially the Internet, are not secure enough for this type of information.



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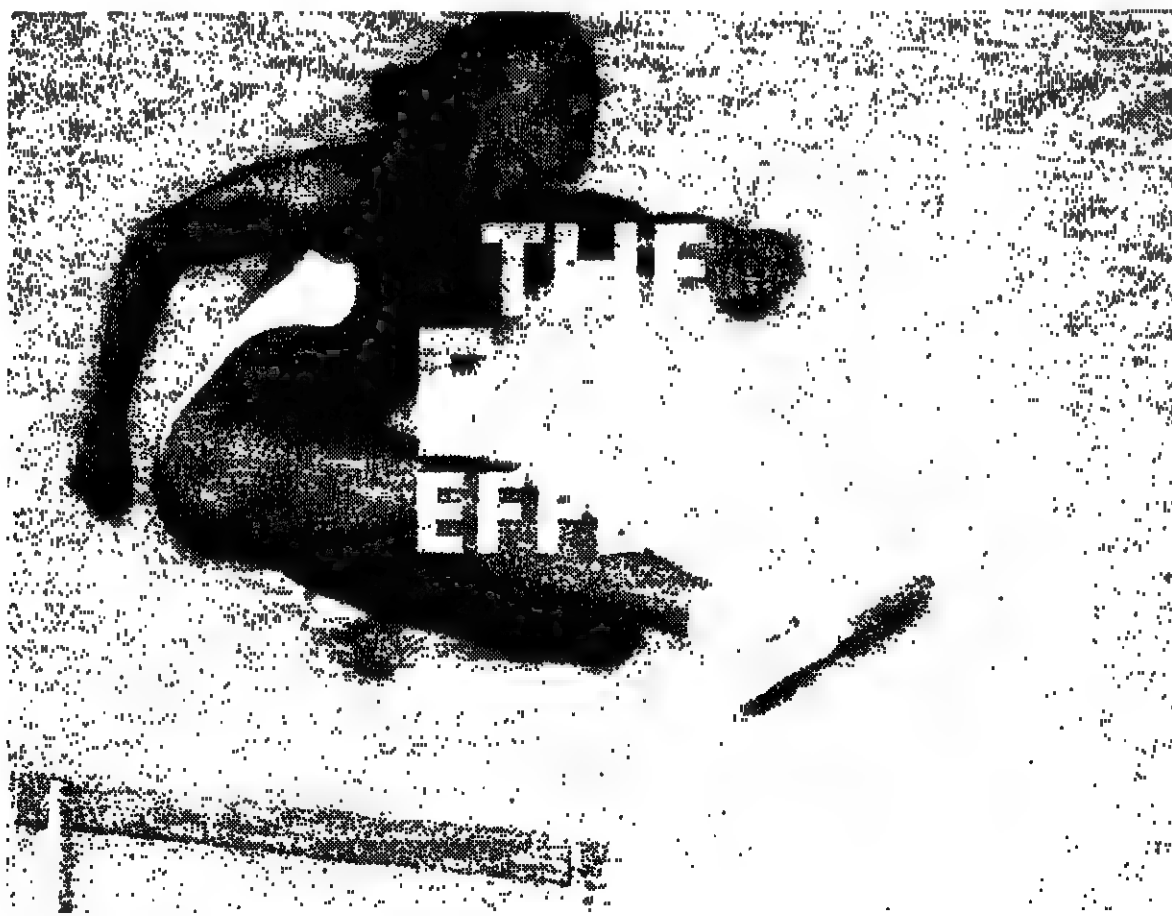
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FT 10 MEDICAL SERVICES

PATIENT BOOKING SYSTEMS • By Joia Shillingford

Radical way to speed up referrals

A pioneer project in the UK benefits doctors and patients alike

Imagine going to the doctor, getting a referral to the hospital and being able to choose a suitable date before you have even left the surgery. This could soon be a reality for UK patients living in the West Middlesex University Hospital NHS Trust area.

West Middlesex is pioneering a radical new patient-booking system in a £1.5m project funded by the European Union. Designing the Cobra system involved a massive business process redesign (BPR) exercise to make possible a new way of booking-in patients. Now, when patients who are participating in a trial of the system, visit their general practitioner, this is what happens: if the patient needs surgery, the doctor and patient fill in an on-screen questionnaire together. The questionnaire will typically ask questions about the patient's medical history and the surgery needed.

If the patient is approved for surgery, another form will prompt the doctor and patient for anaesthetic information. One question might be whether or not the patient is anaemic. If this second form is approved, the doctor and patient can book

an appointment directly to the hospital system, choosing from consultants and dates.

The idea is that the system avoids the need in straightforward cases for the patient to visit outpatients for a check-up first. The thinking behind this, says John Sidman, IT director at West Middlesex, is that doctors in outpatients will be freed from doing simple diagnoses and will have more time to do operations themselves.

Research shows that the more operations of a certain type a doctor performs, the better (and faster) the doctor is likely to become at doing them - increasing patient throughput.

In some cases, the system will obviate the need for patients to go to hospital at all. For example, a GP filling in an online form with a healthy, young patient needing a small mole removed, might get the response back that this operation can be performed by the GP.

For patients, the system means that even if the GP cannot fix their problem immediately, they leave the surgery with an appointment and a feeling that they have made some progress.

"The entire process redesign was done around what



Patient-friendly system: the computerised administration system also takes care of small but practical points

the patient needs," says Mr Sidman. "It also looks at what happens when the patient turns up at the hospital. It asks whether patients have any special needs. Did they arrive with someone who needs a taxi home, do they have a child with them? These points may seem small but they can be very important to the arriving patient."

The system is made up of a number of components. The patient administration system (or Pas) is from Siemens Healthcare Services part of Siemens Nixdorf. Called OpenPas, it was chosen for two reasons.

"It represented an upgrade to the hospital's existing IRCPas system," says Mr Sidman, "though it was more of a replacement. We purchased the concept before the product was a reality."

OpenPas was also based on open systems and client-server technology, and it supported the Riche framework, a set of EU standards to which health software should comply, he says. This means that it is easy to integrate with other health systems based on Riche.

For example, the surgery system (and the accident and emergency system) integrates with OpenPas via applications programming interfaces (APIs) that conform to Riche.

This integration enables GPs to book patients directly into the operating theatre and connect - via the online forms - to parts of the surgery system for pre-operative and anaesthetics exception reporting.

The surgery system - also part of Cobra - was built by Ireland-based Irish Medical Systems (IMS), West Middle-

sex and IMS worked closely together to develop this system in which IMS will retain intellectual property rights.

Apart from Siemens Nixdorf and IMS, the third member of the consortium that bid for the EU Cobra project was Adams Training and Advisory.

Funding for Cobra was awarded in December 1994 and two years of business process redesign and systems design followed which finished last Christmas. The final system runs under Unix on industry-standard server systems, with Oracle as the database.

However, Mr Sidman says the applications are easily portable to Microsoft's NT or could be run with another database. "We ran a series of pilots to test the concept," says Mr Sidman.

"We've tested it with six GPs and will roll it out to 250 doctors in all. The roll-out will begin in April, with quite a few GPs coming online before the end of 1995."

Doctors will be able to have a connection to West Middlesex's intranet (a private internet) or gain access via a modem to modern link. "When GPs are linked together via the NHSNet network, we will be able to connect to that," adds Mr Sidman.

"GPs are very pleased with the system," he says, "but they can't integrate it with their other NHS systems because these are not 'open'." Mr Sidman feels the NHS Information Management and Technology (IM&T) initiative should pay more attention to the 'technology' part of IM&T, rather than just leaving it to the computer industry.

SMARTCARDS • By Mark Vernon

Still a long way to go

France and Germany lead the way in smartcard applications

Whenever smartcards are announced as a technology ready and waiting to happen, applications for holding medical records and health service information on them are frequently mentioned in the same breath. Now a chorus of commentators is predicting that 1996 will at last be the year of the technology's 'small bang'.

The question is, will health be on the cards? The logic for using smartcards in medicine is as simple as it is profound. Healthcare provision carries high administrative costs which can be dramatically reduced with a successful electronic scheme.

The 'science' of drawing up such a system has come to be known as Informatics. But if their justification is straightforward, the adoption of smartcards is complex. Across Europe it varies according to a number of economic and cultural factors.

Germany's 70m citizens are already in possession of cards carrying administrative information. In France, for a scheme called Systeme Electronique de Sante de l'Assurance maladie, Vitale will roll out 25m cards this year. And by the end of 1999, holding a card will be required for participation in the country's health insurance system.

But, in the UK, this year's 'small bang' is unlikely to be louder than a whisper. "We have no current plans, though it remains part of our strategic agenda," said Ross Langford, speaking for the British Medical Association, though only in relation to internal NHS networks.

Why is Britain so different? Therein lies a story: 10 years ago, the

NHS carried out two trials involving smartcards. Funded centrally, and run locally in Wales and Exmouth, these explored how patient-held cards, as opposed to those kept by hospitals or doctors, might be used for introducing new efficiencies when providing care.

The feasibility study suggested, however, that these would only be cost-effective if cards were used to store more than one type of medical information, such as personal health records and prescription data. This

such as would be necessary if smartcards were to have application in emergencies, is one that remains, as does the more basic question of what happens if someone loses a card.

The cost of the investment remains a big issue, too. This is partly a problem that arises from the decentralised economic structure of the NHS, which, although encouraging local projects, creates logistical problems for larger roll-outs.

Smartcards are being trialled in a number of innovative health

traditionally high spending and inefficient, depends upon whom is asked.

These costs do, however, provide examples of the powerful rationale which can be offered for spending the money the smartcard infrastructure requires.

In Germany, the government estimated that the costs would total between DM400-500m when its scheme was launched in 1993 and it anticipated a payback over a five year period, a result due to be confirmed soon.

Savings come from insurance accounts, used to reimburse medical practitioners, being settled electronically and overnight. Under the paper-based system used previously, the cost of verifying prescriptions is estimated at around DM770m per year, say analysts at Datamonitor.

The French roll-out provides the beginnings of an answer to fears about security, discussed previously. In the first wave, the cards will carry only insurance information, with data useful in emergencies, such as allergies or chronic complaints, being added later.

Access to the cards is by a two-card reader, requiring the practitioners to insert a card capable of RSA encryption at the same time. Datamonitor reports that savings of around 50m a year are anticipated once the system is installed.

It is for these reasons that optimism remains high in the smartcard community, even for the sceptical UK market. Indeed, Peter Cochrane, head of applied research and technologies at BT, recently said that people will be wearing medical records as jewellery before long. Which adds a whole new meaning to being complemented upon one's appearance - at least, by a doctor.



Will health be on the cards?

conclusion had a knock-on effect which put a stop to future development. Not only does it demand investment in an expensive infrastructure and the development of both multiple application capabilities and nationwide standards, but it also raises a number of concerns about security, notably how private data can be kept from other interested parties.

Mr Langford admits that, since then, the worries about security from bodies such as the British Medical Association have receded, though only in relation to internal NHS networks. "The confidentiality of a medical history when passed to insurance applications,"

authorities, performing valuable but limited tasks, such as carrying maternity data for anti-natal care or as cash cards for patients using the ward telephones. But their deployment with a larger scope seems far off. Most hospitals are still working to convert paper records to electronic formats, with all the struggles that involves, legally, technologically and educationally, to say nothing of cost.

As noted above, the situation in France and Germany is remarkably different, though whether because health provision in these countries is structurally better able to take advantage of an investment in smart cards, or because it is

IN-FLIGHT TELEMEDICINE: Case study • By Geoffrey Wheelwright

Hermes research project will aid stricken air travellers

Telemedicine services may soon be offered on international flights

It's no fun getting sick while you are on holiday - and perhaps even worse if you are travelling on business. But it can be positively dangerous if you become seriously ill while you are 30,000 feet in the air on a long-haul commercial flight.

If your problem is serious enough - such as a heart attack, stroke or seizure - the pilot or cabin crew may scramble through the plane looking for a doctor. The chances are, however, that such a doctor will know little or nothing about your medical history and will not have the diagnostic tools relevant to make anything more than the most basic diagnosis.

All of that may soon change as the result of a three-year research project into telemedicine, funded by the European Commission.

Known as Hermes - a short form of the phrase 'Healthcare: Remoteness and Mobility factors in common European Scenarios' - the project began in January 1996, and is being co-ordinated by the University of Edinburgh, in association with medical, technical and business experts from Germany, Belgium, Portugal, Greece and the rest of the United Kingdom.

The goal is to put in place a system that would provide 'end-to-end' basic medical diagnostic and telemedicine

services for travellers - from the moment they leave on a trip to the time they arrive home. This includes designing portable diagnostic and telemedicine conferencing units that could be used by local doctors at a holiday hotel or business conference centre to exchange detailed medical information with a patient's regular doctor in their home country.

The first step in providing that type of telemedicine support begins when a patient steps on an aircraft - and that is where much of the research group's effort is now concentrated. Supporting that effort is the construction and design of the communications infrastructure required to allow telemedicine links between

Passengers may opt for insurance to cover the cost of telemedicine services

ground-based medical support teams, local doctors and planes.

Dr Andrew Lamb, a research fellow at Edinburgh University, who is working on the Hermes project, explains that very high frequency links are likely to be used for transmitting air-ground medical data on short-haul flights within Europe.

Meanwhile, satellite-based communications (probably using existing in-flight telephone systems) will proba-

bly be employed for long-haul flights.

One of the other key elements to this in-flight telemedicine system is a 'portable vital-signs monitoring system' (PVSM). It would look at vital signs including ECG levels, oxygen saturation, temperature and blood pressure and would be monitored continuously, with information transmitted in real time to an appropriate medical expert at a ground-based medical facility.

By combining the information produced by this PVSM with advice from ground-based medical staff, the Hermes team suggests that more timely and accurate medical decisions can be taken. These decisions might be whether or not the plane needs to make an unscheduled landing at the nearest airport to get the patient to a hospital or perhaps what on-board medications might be administered.

Dr Lamb says the group hopes to have the system ready for 'commercialisation' by the end of this year, but warns that there will be a number of external issues to address before it can be widely implemented.

Firstly, it will need US Federal Aviation Administration (FAA) approval. Then individual airlines will need to make decisions about how and where it will be implemented. "There is a financial question over it from an airline point of view," he says. "They need to decide whether it will really be beneficial in terms of costs for aircraft to have this facility. It may, however, be beneficial from a public relations point of

view."

He admits that governments may also wish to become involved and, in some countries, may legislate to ensure such services be available on board in aircraft that pass through their airspace.

In terms of covering the cost of delivering this service, Dr Lamb says there are several potential financial models including one based on offering travellers some form of 'end-to-end' travel insurance.

It would ensure the cost of the service (such as satellite communications time when doing telemedicine from the aircraft, medical personnel costs, ambulance transport and so on) will be met by insurers.

The real key lies in building the appropriate support infrastructure so that emergency calls can be handled quickly, reliably, accurately and professionally, says Dr Lamb.

Hermes is considering among other options, establishing a corporate network for its own services with a single European number and automatic routing and security/access control. National 'telemedicine access points' will control all communications functions.

The group also says that a message-passing system is also being developed to allow doctors to control the services.

It further pledges that the range of Hermes activities will be met on a round-the-clock basis, in all clinical specialties and involving all users and providers in the healthcare enterprise.

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BRITISH COMPUTER SOCIETY • Information Systems Management Awards

Top team to be announced next month

The winner of the 1996 Information Systems Management Award, organised by the professional body, the British Computer Society, in association with the Financial Times, will be announced at a dinner in London on May 14.

The speaker will be the deputy chairman of Marks and Spencer, Keith Osler.

Individual tickets are £65 and corporate tables are available at £650.

The event is at the Landmark Hotel, opposite London's Marylebone Station.

The awards recognise achievement, improvement and innovation in information systems management in the UK. The judges look in particular for impact on business performance, the relationship with end-users, and the management of development or operations or both.

The award typically goes to a team,

rather than an individual.

Past winners are Ford, Tesco, P&O Ferries, Eagle Star Life, London Ambulance Service and Cheshire County Council.

The sponsors are Blue Circle Industries, Deloitte & Touche, KPMG Impact, Unilever, and the Woolwich bank and financial services group.

These can be booked through Karen O'Sullivan on 01793 417494 and at kosa@btinternet.org.uk.

TELEMEDICINE Case studies By Geoffrey Naim

Nominated for IT 'Oscars'

Peace-keeping troops and civilians in Bosnia benefit from pioneering telemedicine projects

Thanks to telemedicine, the technology deployed by the US Army in its front-line mobile Army Surgical Hospital (Mash) units has come a long way since the days of Hawkeye and Trapper John, the two characters in the popular TV series *MASH*.

The antics of the 8055th Mash unit took place during the Korean War, when front-line medical facilities were limited. Forty years on, conditions have improved considerably and using telemedicine, US troops in the front line can benefit from the same expert medical advice as civilian patients in hospitals. A pioneering telemedicine system for radiology applications was deployed during the US peace-keeping mission to Bosnia-Herzegovina in 1996.

The project, called Deprad, aimed to provide advanced radiology support to US troops in the region and so minimise unnecessary evacuations and troop movements and accelerate their return to duty. There were no radiologists deployed in Bosnia-Herzegovina but using Deprad the primary diagnosis of radiology exams was performed by radiologists stationed in

Hungary and Germany.

Deprad is by no means the first example of 'teleradiology' but it is significant because, unlike most telemedicine projects, it used commercial off-the-shelf hardware and software and the time from conception to full operation was just three months. The project has been chosen as one of the six finalists in the Health category of the Global Information Infrastructure (GII) awards, a US initiative to promote innovative uses of the Internet and networking technologies. The winners of the GI awards, described as the 'IT Oscars', will be announced later this month.

The 212th Mash unit involved in the Deprad project was located on a mountain 25km south of Tuzla in Bosnia. A local area network (Lan) was installed at the Mash to link the computerised radiography, tomography and ultrasound systems with film digitisers and workstations.

The equipment communicated locally using the Dicom messaging standard. This is a new standard for transferring images in multivendor environments using IP-based

networks - the protocol that underpins the public Internet.

The Lan was connected by microwave link to a receiving station 10km away and the images were then sent over military satellite network to a ground station in Landstuhl, Germany. The data could then be transmitted to the regional medical centre in Landstuhl or forwarded over leased lines to a combat support hospital in Hungary, where the primary diagnosis and archiving took place.

More than 15,000 X-ray images were handled this way in 1996 and each image took less than five minutes to travel from the Mash to the Hungarian hospital. A radiologist would read the exam and return a diagnosis either by phone, fax or using the computerised information system within minutes of receiving the image.

Prior to the installation of the Deprad network, it could take days to get a diagnosis because films had to be flown or driven out of the country to a radiologist or the patient was evacuated before a radiologist could see films.

The Deprad system does away with conventional X-ray films: the images are handled as computer files - though they

be printed out if "hard copy" is needed. Teleradiology thus eliminates the need to process films using water and chemicals which may not always be available in a Mash unit.

The off-the-shelf teleradiology system was the result of collaboration between the US Army radiologists and the Georgetown University Medical Centre in Georgetown, South Carolina.

One of the most interesting aspects is that maintenance and support to the project was done over the Internet. The Lams in the Bosnia Mash and the Hungarian support hospital were connected to the Internet via their links to the network at the Landstuhl medical centre. This allowed engineers in Georgetown or equipment vendors to access the sites in Bosnia and Hungary and so support and maintain the equipment remotely.

The Deprad project was judged a success by its participants, both in meeting its aims in improving health care in the Mash units and demonstrating that telemedicine can be done using standard technology.

Civilians in Bosnia could also benefit from better healthcare thanks to a similar telemedicine project set up by the Italian armed forces, the San Raffaele Hospital in Milan and the European Space Agency.



During the conflict, Bosnian children from Zenica are carried to Sarajevo airport terminal for transfer to Germany by Norwegian Army medics. Today, military telemedicine systems in the region are also benefiting civilians.

The project, called Shared, started in 1996 with an initial aim similar to Deprad, namely to provide telemedicine services to Italian peacekeeping forces at a field hospital in Sarajevo. But the project also aims to bring telemedicine to Bosnia's civilian population via the Clinical Centre of the University of Sarajevo, where Italian military doctors already attend civilians.

The end of the war in Bosnia left the medical facilities of the Clinical Centre in a pitiful state. To make matters worse, hospital personnel of Serbian nationality had fled Sarajevo leaving the hospital desperately short of

qualified medical staff.

The Shared project aims to cover these deficiencies using videoconferencing technology to allow the hospital's young, inexperienced staff to obtain remote consultations, remote diagnosis and continuing medical education from the San Raffaele and other hospitals.

The project will focus on using telemedicine in radiology, pathology and ophthalmology - the Milan hospital has already exchanged ophthalmologists with the Sarajevo centre. The system uses a mix of satellite links and ISDN terrestrial links to connect the hospitals together.

The ESA supplied the satellite base stations to connect the centres using the Eutelsat satellite, while the US company Videoserver supplied the gateway technology to allow videoconferences over ISDN links.

The next stage of the Shared project is to take its telemedicine technology on the road - and, this month, the team hope to demonstrate a "tele-ambulance". This is a vehicle equipped with a satellite terminal and biomedical equipment that can be taken to outlying areas and connected into the Shared network of hospitals, using satellite links or ISDN terminals.

CASE STUDY By Geoffrey Wheelwright

Close analysis of hospital's services

Managers gain valuable insights with online analytical processing

It is relatively easy to measure the effectiveness of a manufacturing operation - or count the amount of money brought in by a service-based business. But how do you calculate the efficiency of a hospital? What statistics are meaningful in doing so - and how can they be applied to improving the operation of the hospital?

Those were just some of the questions facing what is now the Pinderfields and Pontefract Hospitals NHS Trust in the UK as it started several years ago to estimate how to parcel out its budgets and resources in the face of strained healthcare budgets. According to John Wood, director of performance and information at the hospital, it was no easy task.

He says the hospital, which now has more than 4,000 employees and an annual budget in excess of £110m, started this effort several years ago. It worked with its software supplier, Comshare, to provide hospital executives with top-level information and statistics that aimed to provide a good overview of the operations of the hospital through an executive information system.

"As the process evolved, it became clear to us in early 1997 that this was only meeting a small percentage of the organisation's needs - it allowed executives top-level information, but general managers were demanding more and more information," Mr Wood explains.

"The process we had in place was that managers would have to go to management information department and get them to run a number of reports from operational systems, then analyse and try to make sense of it. It would take two to four weeks to have that analysis done. And we often found that when the department had completed the analysis, managers had asked the wrong question."

Olap system

The solution finally came when Comshare introduced the hospital to a technology known as online analytical processing, Olap - see cover story, page one. Simply put, it allowed managers to make their own requests for much more detailed management information that could be extracted - in real time - from the vast repository of data within the hospital to produce something that was more accurate, timely and useful than before.

"We mainly want to look at patient statistics - such as how many out-patients has a particular consultant seen, how many were seen in clinic or how many operations were done in a

theatre session," he says.

"The general manager can start at the top level, then drill down and can look at his own clinical service unit. If perhaps he looks at surgical area, within that there would be general surgery, urology and ENT (ears nose and throat). If he picks general surgery, then he could have a look at the four surgeons doing that work."

This kind of analysis yields all kinds of useful data that helps the hospital in wide variety of resource planning - deciding areas that perhaps need more help, better diagnostics tools - and perhaps areas where more preventive medical work could be done.

Success

The impact on emergency cases is significant. Comshare's technology calculates the point at which extra beds or wards are released. "The success of this proactive approach has enabled funds to be released without hesitation, as the information virtually makes the decision for the Trust's managers."

Operationally, the application has vastly improved the efficient use of resources. Processing of outpatient data has been reduced from three weeks to four hours, enabling the information staff to look at quality and systems development rather than processing numbers.

It also helps that everyone in the hospital is working with the same view of the same information system, to implement the same, single strategy. The system also encourages interaction between functions, offering a better understanding of different tasks and pressures they each face, he says.

"It offers a rich database of information that managers can access in real time and address a question that might be in their minds," he adds.

"What it is trying to do is cut out the 'middle man' in terms of information. Instead of general managers trying to go through management information reports, they can manipulate it directly as many times as they wish. It brings it in at their fingertips so if they need to make a business case for another consultant or to develop service in a certain way if they have trend lines showing a rise in certain kinds of cases."

"We have found that because most NHS establishments are stretched there are a number of issues they can never quite address adequately such as data quality," he concludes.

"While we have had lots of data before now, the question was whether or not the data was accurate - but the management information staff's time that has been released by using the Olap system is now being focused to address the data quality and accreditation process and data protection issues."

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INTERNET AND THE LAW • By Nuala Moran

The Internet has developed a reputation as a law-free zone, beyond the writ of national jurisdictions and the influence of law enforcement agencies.

As a result, there is much clamour from governments, law enforcers and business for a unified legal framework.

While governments and law enforcers are concerned about crime and taxation, business wants global agreements covering issues such as data protection, intellectual property protection, and legal liability, to allow it to trade with confidence. Inevitably, business favours the lighter touch of self-regulation, rather than having to operate under a heavy-handed criminal law regime.

One of the key stumbling blocks in framing Internet laws is the conflict between the needs of governments and the needs of business. This is exemplified by arguments over the use of encryption, with companies saying they should be allowed to protect information - one of their most valuable assets - by encrypting it, and governments arguing that in the fight against crime, they must have the right to control the use of encryption, and to monitor and decrypt Internet traffic.

The Internet is undoubtedly becoming an important medium for electronic commerce, reinforcing the need for global regulation. But as Robin Lawrence, head of the Digital Crime Unit at the Federation Against Software Theft (FAST), confirms, Internet-based crime is also growing.

"The month-on-month trend is upwards. In December 1997, 20 per cent of the 80 to 100 complaints we receive each month related to the Internet. In January 1998, the figure was 28 per cent," he says.

The Internet is a primary conduit for software theft - it is used to distribute unlicensed software, and is now increasingly used for passing round counterfeit soft-

Tensions rise between governments and the world of business

In the fight against international crime, politicians insist they have the right to control the use of encryption, but companies argue that they must protect valuable business information

ware, and other intellectual property, including music, he adds.

The reach of the Internet is giving criminals the ability to form international conspiracies, making it harder to detect and catch them. "Such groups often source the material in one place, prepare art work and packaging in another, and distribute it in a third location," says Mr Lawrence.

Not only can criminals hop around from one jurisdiction to

another, the digital nature of software makes it difficult to collect the evidence on which to base a charge. Usually there is no hard copy of any evidence, and no way of telling if electronic evidence has been changed.

Revisions are expected to the UK Police and Criminal Evidence Act to cover computer-based evidence, adds Mr Lawrence.

One of the main allies of Fast and other law enforcement agencies, in combating Internet crime are the Internet Service Providers (ISPs).

There is uncertainty about the extent of an ISP's legal liability if criminal activity takes place on its network. "However, once a service provider is notified that there is a problem with a Web site it hosts, its responsibility becomes greater," says Mr Lawrence.

It is the issue of pornography on the Internet that has brought the question of legal liability of ISPs most sharply into focus. UK service providers, anxious to avoid the heavy hand of legislation, have set up the Internet Watch Foundation, to handle complaints and notify ISPs of obscene material on their networks. In its first year IWF referred on 781 complaints, the majority involving US-based ISPs.

Janet Henderson, Strategy Rights Manager at BT, one of the founders of IWF, believes that

the way in which the industry banded together to form the foundation provides a model for self-regulation. The concept of a central clearing house for the reporting of illegal material could be extended to other types of material - for example, copyright.

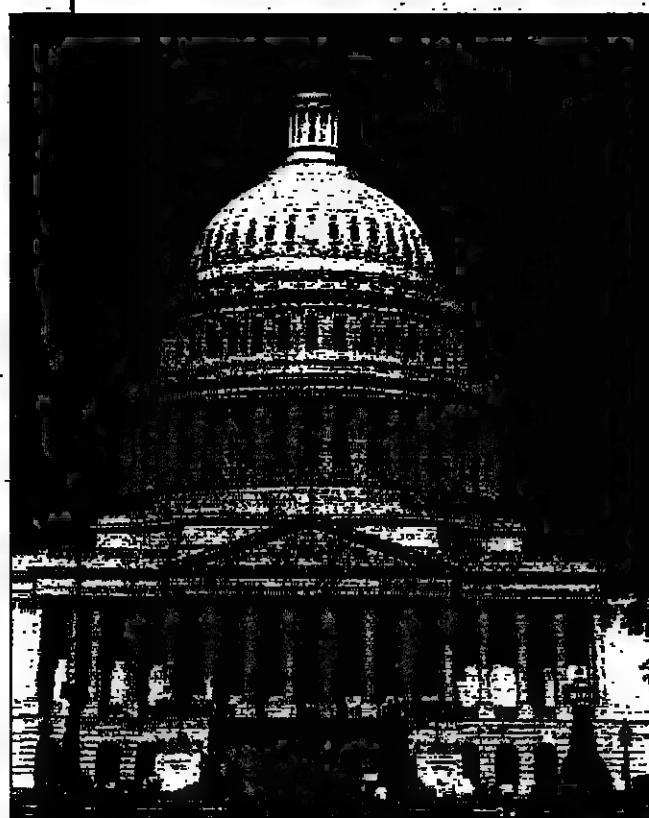
"The issue of pornography is very emotive, and with the issue of criminal liability hovering, the industry is united to deal with this," says Ms Henderson. "The industry has shown that self-regulation can work."

Internet technology is moving so quickly it is pointless to try and legislate, she argues. "It is a classic situation of drafting legislation which is out-of-date by the time the ink dries. For the time being, self-regulation is more robust. It will buy time to assess the technology and see if self-regulation works."

BT is keen to apply the clearing house approach to copyright. Ms Henderson says the World Intellectual Property Organisation (Wipo) Treaty agreed last year, and enshrined in the European Copyright Directive, leaves the question of who is responsible for loss due to infringement of copyright open to interpretation.

"I'm afraid the conclusion will be, if in doubt, sue the service provider," she adds.

Ms Henderson is a council member of IPSA, the Internet Service Providers' Association,



On Capitol Hill, many politicians see the export of high-level encryption software as opening a channel for organised international crime

which presents 80 ISPs.

"We want the environment to be safe that people want to use it. It is in the interests of consumer content providers and service providers to have show stopper issues such as legal liability lifted."

There have been a number of similar moves by other commercial interest groups to clarify the legal status of information and transactions on the Internet.

Last November, the International Chamber of Commerce (ICC), Paris, published guidelines for a legal framework to prove that electronic messages are sent by the organisation claiming to send them, and thus are legally valid.

The guidelines cover the use of digital certificates and certification authorities, both areas where governments

are currently contemplating legislation.

The ICC, which represents 63 national chambers of commerce, said it wanted to set up a system of self-regulation on behalf of business world wide to pre-empt the establishment of regulatory barriers by national governments.

The guidelines are based on existing law and practice in different legal systems. However, the ICC acknowledged that there may be difficulty in applying them in some jurisdictions, where it is not clear whether or not electronic transmission satisfy writing and signature requirements.

One of the most influential bodies pushing for self-regulation is the Transatlantic Business Dialogue (TABD). This club of more

than 100 chief executives from leading European and US companies was set up in 1995, with backing from the EU and the US government, to promote the liberalisation of trade between the two blocs. TABD argues that the development of electronic commerce requires a review of traditional practices and legislation.

Bill Foulkes of EDS who is US chairman of the electronic Policy Committee of TABD, says the existing framework covering international trade is inadequate in the face of the Internet.

"The global nature of the medium highlights the differences between national systems. There is a patchwork of laws, and in some cases these are contradictory."

The club is studying national laws to develop a sense of what the norm is - "we will then ask governments to harmonise policies, or engage in negotiation for mutual recognition where there are differences," he says.

"It is critical that any regulatory approach be minimal, globally harmonised, technology-neutral and promote global inter-operability."

The TABD club supports President Clinton's proposed Global Framework on Electronic Commerce, in all respects other than encryption.

The club wants regulation to be on the basis that information is property. On this basis, users should have the right to choose the appropriate strength and type of encryption, depending on the value of the information, says Mr Foulkes.

TABD recognises that law enforcement agencies have valid requirements to access information from time to time, but says that they should have to obtain a warrant, in the same way as a warrant is required to search a physical property.

"This is the most difficult issue in terms of agreeing a regulatory framework for trade on the Internet. It goes to the heart of one of the most fundamental issues in a democracy - the right of an individual to protect their property."

CALL FOR CONTROLS • By George Ffrench

The Internet must regulate itself

It has so far proved impossible to impose limitations in cyberspace

A global consensus is emerging that pornography and other undesirable on the Internet should be controlled mainly by self-regulation rather than by law.

The issue is extremely hard to resolve because although the Net is a global medium - and different cultures take very different attitudes to what material is permissible, how it should be controlled, who is responsible and what penalties are appropriate for abuse.

Unregulated, the Internet could become a medium not only for hard-core pornography but also recipes for bomb-makers, incitements to racial hatred, credit-card copying instructions and the nefarious activities of hacking, piracy and libel.

That the Internet looks likely to avoid strict legislation is partly because the libertarians have won the argument in the US (from where the Internet is run) and partly because it has so far proved impossible to impose effective global controls.

A landmark in the history of the Internet came in June last year when the US Supreme Court threw out the proposed Communications Decency Act. That act was introduced by Congress to impose a criminal liability on service providers and network users who transmitted obscene material.

It aroused much hostility in the US. Objectors said it was so broad that it could even incriminate phone companies for allowing lovers to talk intimately across their networks.

In an appeal case brought by the American Civil Liberties Union and others against the Attorney-General Janet Reno, the court ruled that the act was unconstitutional because it abridged the freedom of speech protected by the first amendment of the constitution.

After that, it was back to the drawing board. President Clinton quickly threw his authority behind a self-regulatory approach, urging the computer industry to make the Net "family-friendly". Parents and teachers should be given the tools to prevent children from getting access to undesirable material, he said.

In December, a conference in Washington, brought together the US government, the industry, parents and teachers to discuss controls,

particularly how enforceable codes of conduct could be formulated to make the Internet "family friendly".

Vice-President Al Gore pressed the industry to come up with solutions within six months.

The EU and other European countries are heading in the same direction. Last July, 29 European ministers meeting at a conference in Bonn came out in favour of an Internet as lightly governed as possible, with the emphasis on self-regulation and private initiative. They also stressed the need for the computer industry to produce content rating systems.

However, they diverged from the US policy on encryption. The US still prevents the general export of strong encryption software products without first depositing the key with the

opment of filtering systems and establishing hotlines for users' complaints and a content rating system.

The Commission argues that although service providers cannot be held responsible for all content on their networks, they have a duty to respond to complaints about content by investigating and taking appropriate steps to remove illegal material and to help block offensive material.

However, there is still a lot of detail to be worked out. A content rating system could be established whereby any material which is not labelled is treated as undesirable and blocked; alternatively, all material could be allowed unless it is labelled for restricted access.

As yet, the industry has not formulated a policy on this. The Commission stresses that whatever is decided rating systems must be compatible with each other so that a global standard emerges.

In the meantime service providers have been trying to promote self-regulation, providing software with which users can impose censorship on themselves on their families.

Jonathan Bulkeley, UK managing director of service provider America Online (AOL), says the biggest part of the problem is protecting children.

"The responsibility must lie with parents to supervise their children's use of the Internet, as they should supervise their use of television," he says. But there are things service providers can do to help, he adds.

AOL is introducing into the UK a "Kids' Only" account which guarantees that all the sites accessible are decent and suitable for children.

The account has already proved popular in the US, says Mr Bulkeley. It may be harder for service providers which do not have proprietary networks but only give access to the Internet to offer such facilities.

Mr Bulkeley says that AOL's policy is to protect the customer's right to privacy unless there is strong evidence that a crime has been or could be committed. He says there is a growing number of complaints being made on which the service provider has to make a difficult judgement.

For example, if someone complains of harassment by e-mail, it is very hard for a service provider to distinguish between a message which is a legitimate though offensive complaint and one which a court might rule was harassment.

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INTELLECTUAL PROPERTY RIGHTS • By George Black

Struggle to frame copyright law

Internet service providers argue that it is absurd to hold them responsible for a mass of material that they cannot control

The rapid advance of the Internet and electronic trading has created a whole new set of problems concerning intellectual property rights.

Foremost among these is the question of how copyright law can best be adapted to cope with the world of new media.

"The Internet has always had a culture of free use and it is hard to change that and make people respect copyright," says Liam McNeive, proprietor of a law firm which specialises in information technology.

The World Intellectual Property Organisation (Wipo), a United Nations agency, reached agreement in December 1996 that copyright should extend to electronic networks. This will help to push forward the creation of international copyright standards for digital media and should extend the rights of content providers.

Since then, governments have moved to implement the Wipo decision. The US government's attempt to do so has run into opposition, from the information technology industry and from users mainly in the academic world.

The US government's main concern is to defend the interests of its huge IT and entertainment industries against piracy.

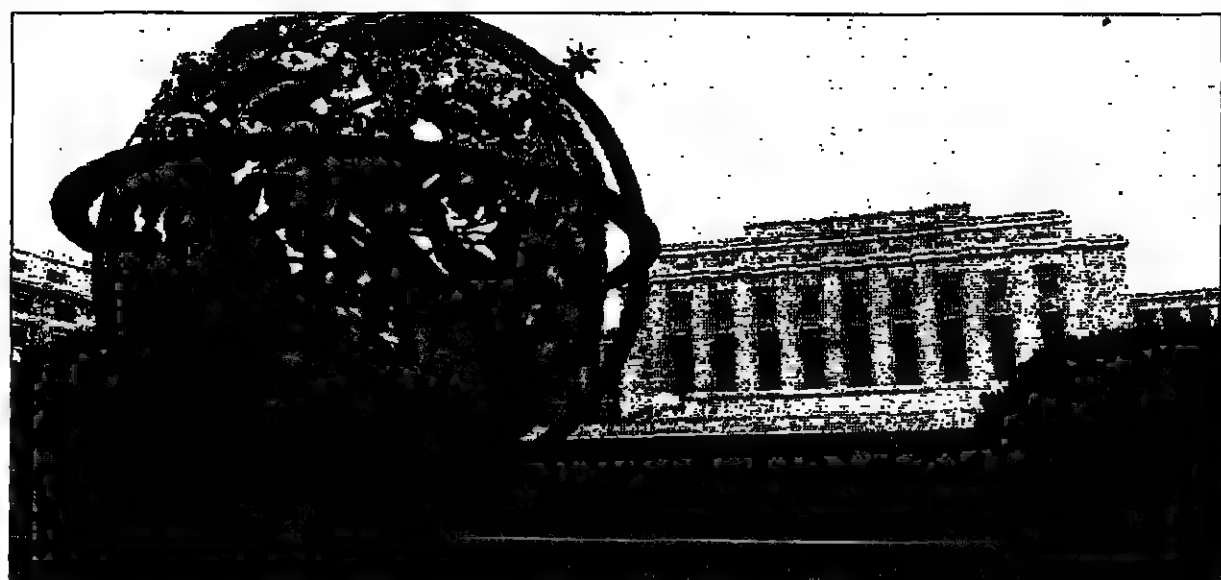
As originally drafted, the

bill would make it an offence to circumvent firewalls and other protective layers of software or to make or import devices that can do this. The bill's supporters hope it will strike a fair balance between the interests of suppliers and users, in line with the objectives of Wipo, but - among others - the US-based lobby group, Digital Future Coalition, has said the proposed law is biased towards suppliers.

The objections say that by such a far-reaching prohibition the act would stifle innovation, outlawing all re-engineering processes, as well as inhibiting academic and commercial research.

The scope of 'fair use' would be too restrictive and users would find that many of their normal work activities now constituted infringement of copyright.

For example, such a law could make the simple browsing of a document on an electronic network an infringement of copyright. There is no test case to establish the exact legal position on this issue yet, but Alistair Kelman, a barrister specialising in the subject, says the law as it exists in the UK appears to be too broad, rather than too narrow.



United Nations, Geneva: pushing ahead to create international copyright standards for digital media

row. "The law protects things it shouldn't," he says. As companies around the world seek to extend the scope of their intellectual property rights under the provisions of the Wipo agreement, this could become a significant threat to information users.

It is also uncertain how the US law would define the responsibilities of service providers for content. The Internet has never had publishers in the traditional sense of companies who take responsibility for the content of their publications.

But some powerful content

providers think that Internet service providers should have to take such responsibilities. The music industry feels especially strongly on this issue: it stands to sustain heavy losses of royalties by piracy of its products through uploading and downloading of virtually perfect quality copies.

In the US, music companies have a number of times notified Internet and other online services providers that their copyright is being infringed by certain sites on their networks and have threatened them with legal action unless they removed

that material. In most cases, the service providers have complied, even though ISPs have generally argued that it is absurd to hold them responsible for a mass of material that they cannot control.

In December, an alternative bill was introduced in the US Senate by Senator John Ashcroft. Among its stated purposes are to clarify the extent of liability of service providers for the content transmitted on their networks, to enable copyright owners to take quick action against infringers and to allow the spread of digital media in education. The user-community has reacted more favourably to this bill better than the administration's, but its prospects remain uncertain.

The UK law on copyright has twice been amended to cope with computerised information - and most other European countries have also come in line with the requirements of the European Commission directive on the subject.

However, as Mr Kelman notes, the Internet poses many legal problems which have not yet been fully resolved by the updated laws.

For example, trademarks cause disputes between companies because the Internet as a unitary global market offers only a single system of registration on a first-come-first-served basis, not by the categories of trade and country which apply to trademarks in traditional media. The debate on how to govern Internet naming looks set to run on for a long time.

Disputes are also likely to arise in the area of databases, a field in which there is still no international agreement on copyright. Last year, Wipo decided to shelve a plan to develop an agreement on protecting databases because national governments had not formed their own policies on the issue. Experts agree that content providers should go to court only as a last resort and should do all they can to protect their property and ensure they get paid by users.

Several electronics manufacturers plan to install encryption systems which require a password to access copyright material. The development of digital watermarks, which can be irremovably embedded in software, should also help to deter piracy. At the same time, new services for handling micropayments on the Internet are emerging, which should create a system for collecting royalties.

DOMAIN NAMES • By Geoffrey Wheelwright

Trademark issues dominate discussion

Company names must be consistent worldwide to ensure access by all website users

What's in a name? Well, if you happen to be someone setting up a commercial World Wide Web site on the Internet, a name can mean a lot. And almost unlike any other business operating in any other environment in the world, commercial Web site owners depend heavily on the value of their name to bring business to their site.

Even the most inexperienced Web browser knows that they have a good chance of finding a company's site if they open their Web browser software and type in a company's name, with a 'www' in front of it and '.com' after it.

And that name must be consistent worldwide because anyone in the world

can access the Web. There is no point in the company being known under one name in the UK and a different one in the US. Users will take whatever name they know best for a given product, company or service and then use that to try and find its Web site.

Take, for example, the trouble facing the operator of the official US government site for the White House. Many users would assume that to visit the 'cyberhome' of the president, they would type the address <http://www.whitehouse.com/> into their Web browser - but this is incorrect.

In fact, the US government-backed site for its chief executive is at <http://house.whitehouse.gov>. Even worse, purveyors of pornographic pictures and videos are actually using the more obvious Web address - <http://www.whitehouse.com/>. After considerable protest from the real White House, the operators of this site have put up a few warnings on their opening page. These inform any school children who might mistakenly visit

this site that they need to be "at least 18 years of age or the legal age to view pornography". The site does not, however, offer any way to prevent underage Web surfers from viewing the content of the site or from viewing nude pictures of its 'White House intern of the month'.

While this site may be simply someone trying to cash in on the political problems of a US president, it does underscore the significant problem faced by anyone who wants to protect their name or copyright on

the Internet. This currently appears to be impossible - even for the chief executive of the world's most powerful nation.

In fact, trademark issues have heavily dominated discussions about how the next generation of 'top level' domain names will be assigned and made available to the world by the Internet's governing bodies. The top level of a Web site is the point at which you generally enter it. The top level of the FT's Web site, for example, is <http://www.ft.com> - and all the

content of the site 'flows down' from the top level address.

There are at present an extremely limited number of top level domain names 'extensions' (i.e. the 'ending' of the Web site name). These include .com (used to denote a commercial site), .edu, .org, .gov, and .net. There are also a separate set of more than 200 national (or country code) extensions such as .uk (for sites originating in the United Kingdom), .ao (for the tiny island nation of Tonga), .ca (for Canadian sites), and so on.

To broaden the number of extensions available - and make them more meaningful - this limited list could soon be significantly longer.

Under the terms of the International Telecommunications Union-supported 'generic top level domain memorandum of understanding' (or the gTLD-MoU), a new set of domain names is now under consideration. This initial set of proposed new domains are as follows:

.firm - for businesses, or firms; .store - for businesses offering goods to purchase;

.web - for sites emphasising activities related to the World Wide Web; .arts - emphasising cultural and entertainment activities; .rec - emphasising recreation/entertainment activities; .info - for information services; .nom - for those wishing individual or personal nomenclature, i.e. a personal *nom de plume*.

In addition, there are also international negotiations under way to determine how new domain names are assigned to companies and individuals - and who controls the issuance of those names. Early this year, however, it seemed as though this process had become somewhat mired in

Turn to page 15

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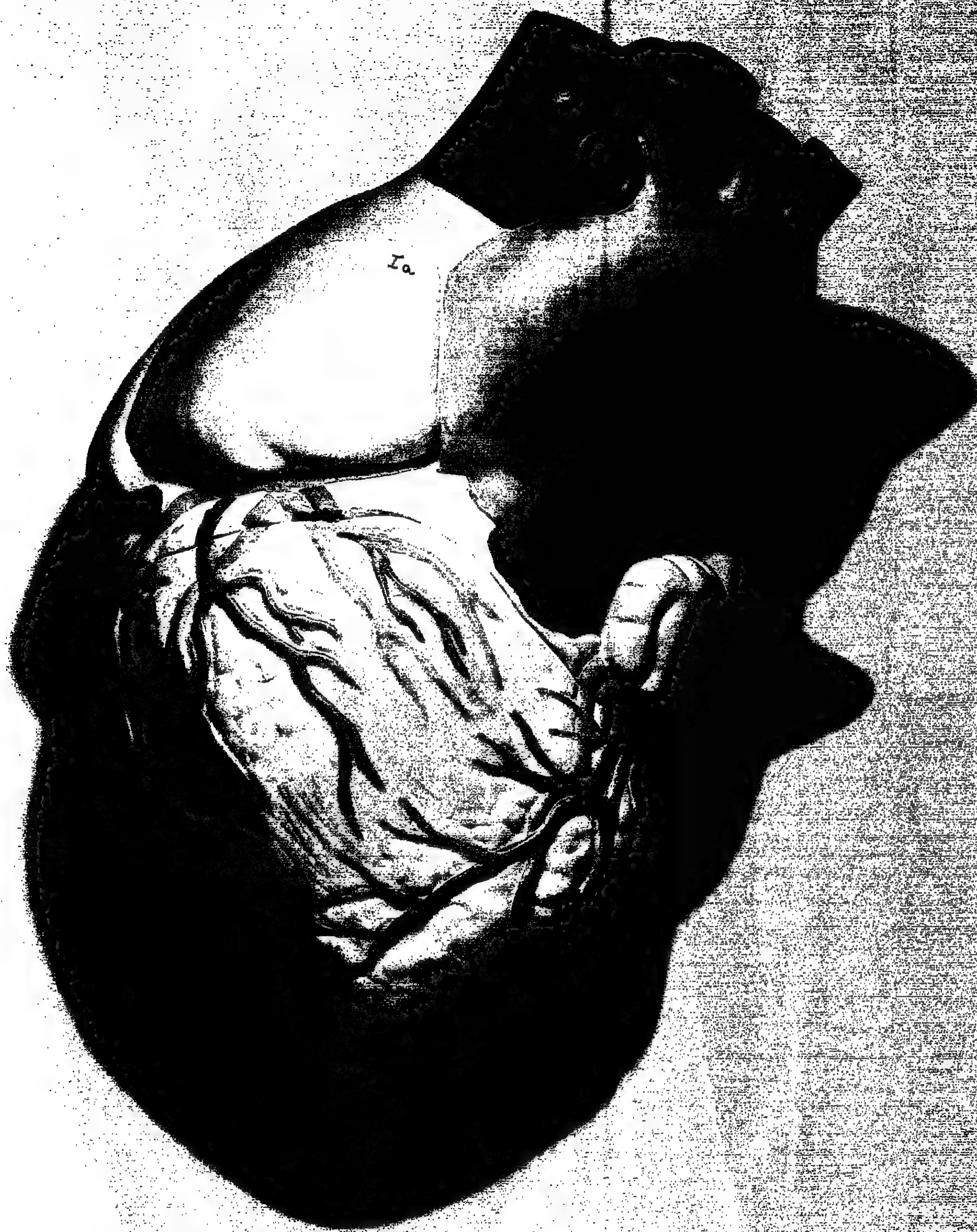
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E-COMMERCE AND REGULATION • By Mark Vernon

Data protection remains an inflammatory issue

Conflicting international views emerge in the creation of a legal framework for electronic trading

Patrick Vittet-Philippe is an expert adviser to the European Commission - in particular, to what is grandly called the Directorate General XIII, Telecommunications, Information Market and Exploitation of Research.

If anyone knows what is on the minds of negotiators creating the legal framework for electronic commerce between the world's three main trading blocks, he does.

"It is a crucial time, with issues pressing in on every side," the French expert told this year's Online Delivery conference, presenting a paper entitled, *Towards a common framework for global electronic commerce: a comparative analysis of EU, US and Japanese policies*.

Encouraging auditors to examine the rich resources published by the Commission for itself, he highlighted three characteristics of the work being done on the wide range of problems associated with electronic payments, regulation, taxation, and new channels.

Firstly, he was glad to report lots of convergence, not only in terms of what was being settled, but also in terms of agreement about what was left best to the markets.

Indeed, within Europe, too, which has demonstrated a tendency towards fragmentation when deciding on the regulation of rapidly evolving issues, countries were broadly marching together in time.

However, certain differences have appeared, such as self-regulation, the favoured option for monitoring Internet content. "This is a very national pre-occupation which can have per-

verse effects. Need I tell you that what is tasteful and decent in France might not necessarily work in Britain," he said.

"Finally," he asked, "what next?" - and highlighted a summer conference, details to be announced, aimed at consolidating the global agenda for the information society.

Two important papers recently published on both sides of the Atlantic, *A European Initiative in Electronic Commerce*, from Brussels,



Patrick Vittet-Philippe: 'Self-regulations has different meanings across Europe'

and, *A Framework for Global Electronic Commerce*, from the White House, do, in fact, show so much commonality of views that the French industry ministry, for one, fears that the Commission has adopted, "an American approach to electronic commerce", and worse, crafted the Bonn Ministerial Declaration, signed in July last year by 29 European countries, "in such a way that it

can be signed by the US."

A comparison of the two documents does show roughly 80 per cent agreement in terms of issues addressed and proposed solutions. Both agree on the unique character of the Internet, that "the private sector must continue to lead", that "government should support and enforce a predictable, minimalist, consistent and simple legal environment for electronic commerce", that regulation will find it hard to keep up with the speed of change, and that co-operation is needed at the international level.

However, differences also emerge, reported Mr Vittet-Philippe. For example, if self-regulation takes on different meanings across Europe, then it certainly does across the Atlantic, largely because that self-regulation should be backed up by, and in conformity with, the legal framework.

Further, the concept of a minimalist legal framework is also substantially different, with the US understanding based upon litigation and contractual law, rather than 'top down' regulation.

What is regarded as necessary regulation also differs across Europe, as was illustrated by heated debates during the drafting of the Bonn Ministerial Declaration.

Mr Vittet-Philippe then went on to outline the areas of divergence which he believes to be not irreconcilable. The most important is the US administration's call for a 'duty free Internet'.

President Clinton's desire to turn the Internet into a free-trade zone, "may be potentially the most controversial initiative announced so far in the field of electronic commerce," he observed.

Developments on this subject are likely to move fast over the next few months. There is also a debate, driven in part by ideology, about the wisdom of imposing standards in electronic commerce, with the US believing very strongly that the market should decide, as opposed to at least some European countries being wary of *de facto* standards. Another set of areas need-



President Clinton wants to see the Internet develop as a free-trade zone

ing discussion are those which arise because of the specific concerns from one of the other sides: what is termed 'illegal and harmful content' achieves central attention in the US, while it is not even on the European electronic commerce agenda.

Conversely, the subject of Internet domain names receives only general levels of reflection in the US, whereas in Europe this has become an increasingly important issue for business.

Mr Vittet-Philippe argued that these matters should be discussed and "the core agenda of true electronic commerce issues fine-tuned."

Other issues present divergences which are serious, constituting potential flashpoints. These should be addressed as a matter of urgency," said Mr Vittet-Philippe.

The first of these concerns encryption and the export from the US of 128-bit software products.

Further, the American paper has provoked strong criticism from within the US industry when it warns that, "the US government will work internationally to promote development of a market driven key management infrastructure with key recovery."

Meanwhile, international criticism of US export controls continues.

The second inflammatory area is that of data protection. In the US, the culture favours a market solution, even though recent debate has countenanced a more direct role for the US administration to safeguard consumer privacy - "self-regulation with teeth".

In Europe, a legal approach remains dominant, and, because of that, Europe also remains isolated from the rest of the world in its approach to self-regulation.

DOMAIN NAMES

European concern over US approach

From page 13:

controversy following the publication of a US government 'green paper' on the issue. Some other governments - including officials in the European Community - have suggested that the US plan would leave too much power in American hands. This is despite the fact that the green paper devotes much of its content to the issue of how the US government, which virtually created the Internet to serve its defence needs, would begin to manage it.

The central debate is over who will administer the registration of new domain names. A plan, backed by the ITU and originating in Geneva, would have created a Council of Registrars ('Core') that would have started registering new domain names this month. In fact, dozens of companies had already signed on to the Core plan and were ready to begin registration work until the US green paper appeared.

The heart of the issue starts with the Internet Assigned Numbers Authority (IANA), headed by Dr Jon Postel of the Information Sciences Institute (ISI) at the University of Southern California. It assigns a unique "IP" (Internet Protocol) number to every computer that 'serves' on the Internet.

The green paper proposes that the US government would gradually transfer existing IANA functions, the root system and the appropriate databases to a new not-for-profit corporation. "This transition would commence as soon as possible, with operational responsibility moved to the new entity by September 30, 1998," suggests the US government in its green paper. "The US government

would participate in policy oversight to assure stability until the new corporation is established and stable, phasing out as soon as possible and, in no event, later than September 30, 2000. The US Department of Commerce will co-ordinate the US government policy role. In proposing these dates, we are trying to balance concerns about a premature US government exit that turns the domain name system over to a new and untested entity against the concern that the US government will never relinquish its current management role."

Additionally, the paper suggests that the new corporation will have its headquarters in the US and be incorporated under US law as a not-for-profit corporation. The paper says that it will, however, have and report to a board of directors from around the world.

According to Stefano Micossi, director general for industry at the European Commission, this approach is causing concern among Europeans. "Although the Internet was developed in the US and initially strongly supported by the US government, it has now become a truly global resource," he says.

There are now three times as many new web addresses being registered in Europe than in the US. The future of Internet domain name governance must reflect this reality, he adds. This should not be regarded as a purely US-led process, dealt with under a domestic rule-making process with tight deadlines.

"The EU is in favour of strengthening the role of international organisations, such as Wipo and the ITU, as a way of ensuring greater transparency and adequate representation of different regions and user-groups," says Mr Micossi.

TELEWORKING/TELECOMMUTING • By Lindsay Nicolle

The US leads the way

Information technology has blurred the old home/office work boundaries. So why are Europeans slow to become teleworkers? Is it just a myth, too good to be true?

Europe is still way behind the US in adopting teleworking - or telecommuting, as it is often known.

Where the US has been encouraged to set up more flexible working methods by its architectural and industrial youth, sheer size, and its freethinking entrepreneurial spirit, many Europeans are typically huddled together in prewar buildings not designed for the modern working world, paying higher telecommunications costs, and hidebound by corporate management cultures which historically 'feed' an office-based workers.

The buildings and telecom costs are issues that Europeans can do something about - and they are making progress - with properties being built with distributed IT in mind and competition being encouraged to cut communications costs. But it is going to take longer to overcome the greatest inhibitor to teleworking in Europe today: corporate culture.

Cultural change takes longer than changes in technology," says Frank Shep-

herd, who is employed in workstyle consultancy for British Telecom. "It's a historical thing. The mindset of senior managers needs to change."

The UK has a corporate culture that still values 'face time' at the desk. Out-of-sight means 'out-of-control' to many managers who simply do not trust their staff to work unsupervised. Worse, middle managers fear losing their power base - or even their jobs - if staff are allowed effectively to manage themselves.

Clearly, teleworking needs to be driven from the top of the company with every director championing the concept. In Europe, it is still seen as an option for managers to pursue if they choose, all too often creating a situation where the teleworking project collapses when the champion leaves.

In the US, apart from a more liberated management attitude towards teleworking in the first place, a significant difference to the European experience is that American workers are far more vocal about wanting to

take on telework.

A growing number of North Americans are taking control of their lives through flexible working. They claim it has helped their careers and enhanced their home relationships, while causing minimal isolation.

'Baby boomers' are leading teleworking in the US, according to a study by AT&T. One-in-six is aged between 33 and 51 and the favoured occupations include salespeople, executives and managers, business professionals, technician/computer programmers, and teachers. They sit in log cabins, New York lofts and Californian condos, working away on PCs with Internet/intranet and e-mail capabilities, fax and phone, for employers based across state lines.

Meanwhile, in the UK, when the lobbying organisation, the Telework Platform, launched a manifesto for flexible working recently, 15 members of Parliament turned up, including a government minister and a select committee chairman - and another 65 MPs

FT
OUT

Focus on flexible working

Here, and on page 17, FT writers examine trends in teleworking, telecommuting and hot-desking

expressed their interest.

Could government ministers become teleworkers in the future? Someone with a high profile needs to lead the way soon since the notion of teleworking is already being regarded as a mythical proposition touted by idealists whose mantra over the past decade is beginning to wear thin.

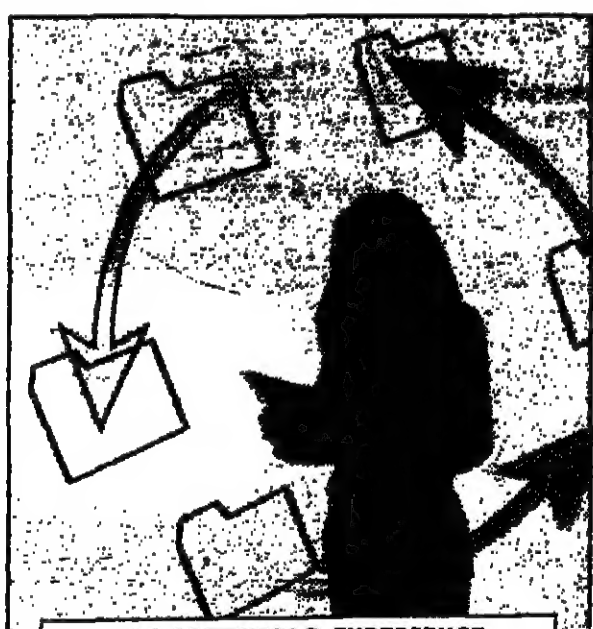
Teleworking is trotted out as a solution every time the UK worries about the performance of the economy in a shrinking world of global competition, or the skills shortages, or the medical expense of treating office stress-related illnesses, or the irreparable harm commuting does to the ozone layer.

It is true that the benefits of teleworking via telecommuting, a virtual office, a telework centre, or so-called 'hot-desking', are many: a more flexible workforce drawn from a wider pool of people, not just able-bodied white males, based virtually anywhere in the country; happier, more personally fulfilled staff who, in turn, are more productive; flatten management structures



Flexible working: by the year 2000, more than 30m people in the US will be telecommuting. The number of Europeans working from home will number around 20m

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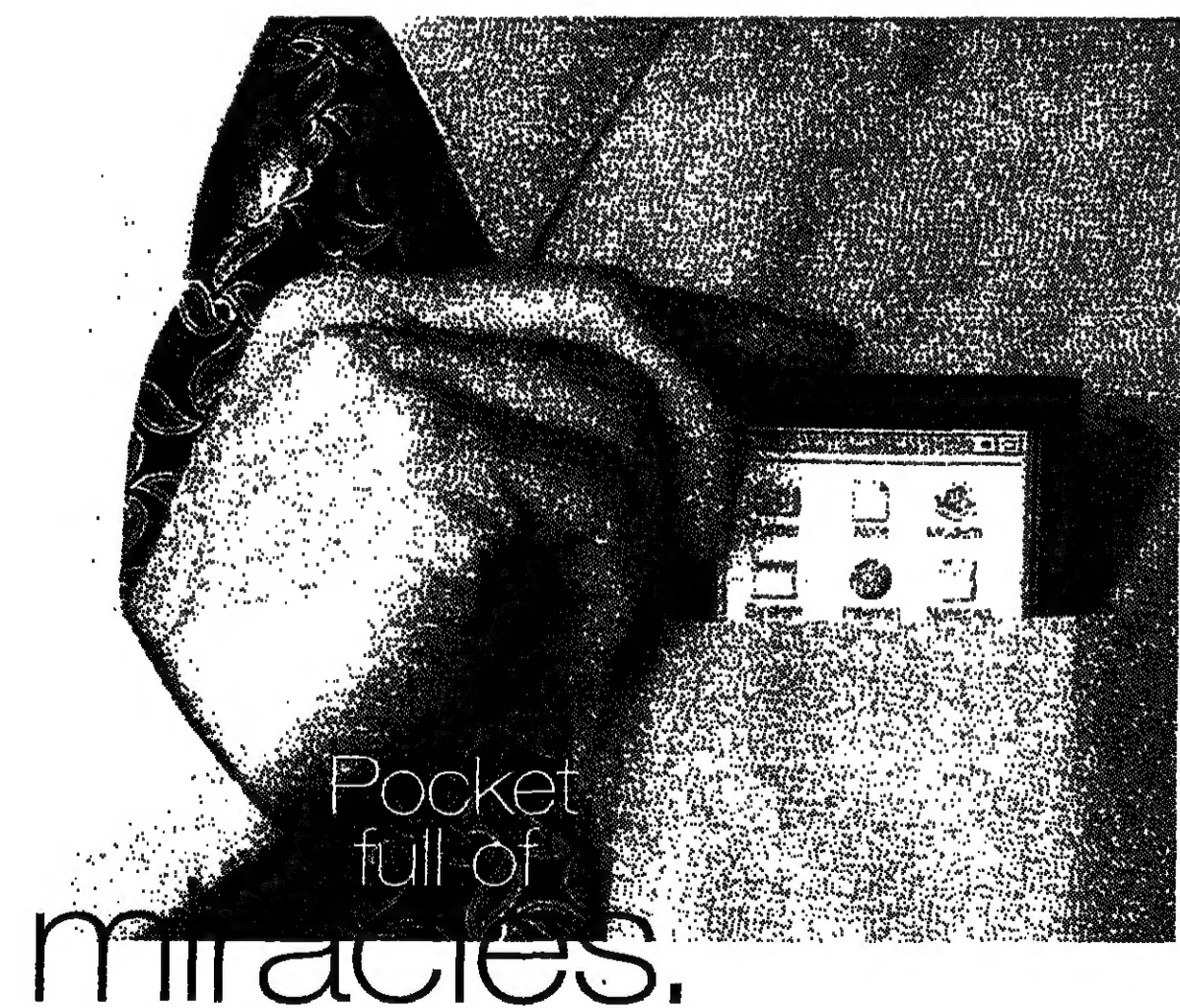
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مكتبة القرآن

EUROPEAN TELECENTRES • By Geoffrey Nairn

Showcases for remote working

Telecentres in rural areas are enthusiastically supported by the European Union to encourage regional development

Hidden in the foothills of northern Spain's Basque Country lies the Encartaciones region where little seems to have changed since the Middle Ages, when pilgrims tramped the nearby Pilgrim Route to Santiago de Compostela.

Centuries later, the Encartaciones area is poised to enter the information age with a 'telecentre' project designed to encourage badly needed high-tech jobs and demonstrate the benefits of IT in rural areas. The telecentre opened last April in the village of Gordexola, 20 kilometres south of Bilbao. It aims to serve 30,000 inhabitants scattered in farmhouses and villages through the Encartaciones area, offering training to teleworkers, IT services to local businesses and, hopefully, creating high-tech employment in a region which, despite its bucolic charm, has suffered decades of economic decline and neglect.

"Our aim is to pass directly from the 19th to 21st centuries," says Alejandro Ariztegui, director of the tele-

centre, which is based in the village's former school. A telecentre aims to provide a half-way house between autonomous teleworking and a traditional workplace.

Typically located in rural areas, telecentres allow local businesses and individuals to use high-speed networks and computer equipment they could not normally afford, and to benefit from support and training.

The Gordexola centre has trained 100 local people in its first year. Mr Ariztegui believes training is essential to raise the awareness of IT in a population whose lives traditionally revolve around farming.

Telecentres are enthusiastically promoted by regional governments and Brussels bureaucrats as a high-tech solution to the decades-old problem of regional underdevelopment and the inexorable drift from the countryside to the cities. The IT industry has long been a big fan of telecentres as they provide a perfect showcase for latest 'remote working' technologies, such as Integrated Services Digital Net-



Alejandro Ariztegui, telecentre director, who firmly supports a commercial approach

works and videoconferencing.

Telephone companies, in particular, are often sponsors of telecentres. Alan Denbigh, executive director of the UK's Telework, Telecentre and Telecentre Association, believes the availability of advanced yet affordable technological infrastructure is crucial to the success of telecentres.

Rural regions have traditionally been the last to be linked to mobile telephone and ISDN networks, for example, although this situation is changing.

The high cost of telecommunications services is another problem for telecentres. Mr Denbigh says only 20 of the 155 telecentres in the UK have ISDN access and blames BT, the UK's dominant operator, whose rates for installing and renting an ISDN line are higher than those in other European countries.

"Unless they have a good reason to want to use ISDN, most people do not go for it," he says.

The European Commission analysed the experiences of early telecentres in its Advanced Communications for Cohesion and Regional Development (Accorde) teleworking project. According to the Accorde report, many telecentres are conceived as tools of regional development policy, rather than as commercial enterprises.

Because of this, they often lack focus and fail to cater for the real needs of the local economy.

The potential for independent funding is often overestimated, the report found, so when the subsidies are removed, many telecentres cannot survive. Regional policy in Norway has long supported advanced communi-

cations to link its remote areas and the Finnmark region in the north of the country was one of the areas examined by Accorde.

Five telecentres had been set up in Finnmark to overcome various local problems: lack of office space, little appreciation of computers and telecommunications, low levels of training and education. The telecentres were meant to create jobs and encourage an IT-based economy. However, all but one of the centres had closed when the Accorde report was written in 1996 and the most common reason was their failure to add value to local skills.

The EC concluded in its Accorde report that telecentres can perform a number of successful functions if they are well-researched and focused, if users are involved and if a reasonable time-scale is allowed.

Alejandro Ariztegui has visited several telecentres across Europe and knows some of the problems they face. Even though his Gordexola centre is jointly funded by the local council and EC until 2000, he decided at the outset to run the centre as a commercial endeavour to reduce the shock when the subsidies end.

"The telecentre is not



In the heart of a Spanish farming community of 30,000 people: the telecentre at Gordexola, 20 kms south of Bilbao. The telecentre offers training to teleworkers and small businesses in the region

designed to be a meeting place for the local unemployed," he says. Anyone with a serious idea can use the facilities of the Gordexola telecentre free of charge for six months. After that, however, they must pay a monthly rent if they want to retain their cubicle in the telecentre and continue using its services, which include 12 computers, ISDN videotelephony and high-speed Internet access via a dedicated 366 kilobit-second link.

The centre has been open for less than a year and only four people have so far taken

cubicle space in the telecentre. Their ideas range from using the Internet to sell information about surface coatings to architects, to providing tailor-made weather forecasts for local farmers.

None of the four users has passed the six-month milestone so Mr Ariztegui is unsure how their various ideas will fair once they have to start paying the rent. The same issue affects the Gordexola centre itself. Telecentres cannot hope to survive if they just offer the standard mix of training, equipment rental and sup-

port, he believes. "Telecentres have to offer services that are better, faster or cheaper than conventional businesses. If they cannot then they will not survive," he says. The centre thus aims to build a database with details on 100 skilled teleworkers from the Encartaciones area that can take on a range of high-tech jobs.

Mr Ariztegui has high hopes that the Internet will generate new opportunities for the centre and he wants to offer web design, multimedia and Internet services to businesses in nearby Bilbao.

WORKING FROM HOME • By Geoffrey Wheelwright

Users face a bewildering choice of equipment

Teleworkers increasingly require easy and secure access to office networks, plus fax and voicemail facilities

Whether you call it teleworking, 'hot desking' or telecommuting, the trend towards encouraging people to work from home is undoubtedly on the increase.

According to the Gartner Group, the IT research organisation, more than 30m US and 30m European workers will be teleworkers by the year 2000. And one of the greatest challenges facing each of them is having the right equipment and software tools to do their jobs.

These include high-speed network connections to the

office, software to properly synchronise data between the office network and the remote desktop and ways to provide better support to teleworkers.

All of these are vital components to effective teleworking and hot desking (where people work from home part of the time and share a 'hot desk' at their office the rest of the time).

One of the leading personal computer software companies serving this market is Symantec Corporation, which sells products that allow users to remotely

access faxes, electronic - as well as 'remotely control' other PCs to retrieve data and carry out technical support assessment.

Symantec believes there are three leading tools-related issues facing teleworkers.

□ The company suggests, firstly, that remote workers need easy and secure access to the office network, helpdesk facilities, faxing and voicemail facilities.

□ Secondly, they need protection from viruses, crashes and unauthorised access.

□ Finally, Symantec says that managers of teleworking employees often complain that they have problems supervising and monitoring the productivity of remote workers. Monitoring products can be provided by a number of products, including Symantec's own 'pcAnywhere' 8.0 software.

Symantec says this latest version of pcAnywhere provides higher levels of security than was previously possible during remote communication sessions by using Microsoft's Crypto API encryption.

In addition, pcAnywhere 8.0 includes support for the Windows NT 4.0 operating system that is increasingly being used on corporate networks.

The new version of pcAnywhere, which has long been

grates portable voice, fax and e-mail messaging, telephone and intranet tools for "as little as \$50 per month".

AT&T is currently only offering this service in the UK. The company says that users of the service can go through one AT&T 'national rate' 0870 phone number and AT&T's call centre to retrieve or re-direct e-mail, faxes and voice messages via a PC, laptop or palmtop computer, as well as a telephone/mobile facility.

The service is also being promoted as a way to allow users to remotely access their office-based computer files and documents. There is also a 'team diary' facility to book meetings with colleagues and customers, access the Internet and intranets, and "reap the benefits of an intelligent telephone service" that allows phones to be redirected to a specified number.

AT&T says its Virtual Workplace service is also not limited to use on desktop and notebook computers. In addition to being available for Windows 95-based PCs, AT&T is also offering it for use with handheld systems such as the 3Com/US Robotics Palm Pilot, Microsoft Windows CE-based handheld computer and Psion hand held systems.

The company also claims to be a real believer in "tailoring its own pcAnywhere to the needs of its 2,500 UK employees operating as teleworkers and mobile staff that use the AT&T Virtual Workplace service."

While both of the latter offerings deal with broad issues around teleworking and remote access, there are also cases where very specific solutions must be found to issues that are unique for teleworkers. One of these is how you provide high-speed data access through integrated Service Digital Network (SDN) phone lines for notebook computer users.

The US-based communications company, Digi International, has addressed this issue in its recent release of an "analogue dongle" for its ISDN PC Card, the Digi DataFire GO! combo card. This enhancement to the card, which was released in February, fits in any standard PC-card slot on a notebook computer and allows IBM-compatible and Macintosh laptop users to use conventional analogue telephone lines as well as ISDN lines for their remote connections.

The company says that having both the ISDN and the analogue dongle, laptop users now have the choice between digital or analogue over ISDN remote connections - this way the user can phone into the network where ever he or she is located.

In this way, users can easily switch between ISDN and V.34 operation over ISDN without installing a different PC-card, or restarting the PC-card, says Digi International.

Users will, however, need officially certified ASVD and DSVI modems for use with pcAnywhere to support simultaneous voice and remote control sessions.

Symantec is by no means the only company offering such tools and services. For example, AT&T, the telecommunications giant, is offering a service called AT&T Virtual Workplace that inte-

CeBIT 98 AT HANNOVER, GERMANY • By Paul Taylor

Around 670,000 visitors attended CeBIT last month confirming the Hannover-based information technology show as the world's largest IT extravaganza. But despite the sheer size of the show, which attracted a record 7,000 exhibiting companies, it was some of the smallest digital machines, the handheld PCs, intelligent telephones and Internet communications devices that once again stole the limelight.

For an increasingly mobile and flexible workforce, these devices hold the promise of ubiquitous 'anywhere, anytime, anyhow' connectivity, and the gains in productivity originally promised by the first generation of 'personal digital assistants' such as Apple Computer's Newton MessagePad.

"The growth of the handheld computing market is being driven by the transformation of the corporate environment into an extended, virtual enterprise - supported by a highly mobile, geographically dispersed workforce requiring fast, easy remote access to networked resources and electronic communications," says 3Com.

Ironically, just as Apple was pulling the plug on the ill-fated Newton six years after it was launched, a new batch of cheaper, easier to use and more powerful handheld computers were on display at CeBIT. These ranged from full-function computers such as Psion's Series 5 and a handful of new machines built around the latest version of Microsoft's Windows CE operating system, to 3Com's pen-driven PalmPilot - which sold a million units last year - and Franklin's credit-card sized Rolodex Rex.

Other machines such as Nokia's pioneering Communicator 9000 and Sharp's super-stylish MC-G1, launched at CeBIT this year, blur the distinction between handheld PCs and portable telephones by combining both functions in one unit.

The renewed flurry of activity in the handheld PC market is evident in figures from International Data Corporation, the market research group. From an estimated 3m handheld units shipped worldwide in 1997, IDC forecasts a jump to 13m a year in 2001.

The renewed interest in the handheld computer market reflects several factors including the growing sophistication of end-users, particularly in the corporate market and the widespread adoption of digital telephony which has made users familiar with many of the advantages of handheld technology.

Electronic mail

At the same time, the explosion of interest in electronic mail and the web has made it more important for corporate users in particular to be able to access their e-mail and corporate intranets while on the move.

Fortunately, these market changes have coincided with advances in microprocessor design and silicon integration which have increased the power and functionality of the second generation of

Small is beautiful at the world's largest IT show

handheld PCs, while reducing their cost. The latest handheld PCs are typically powered by Risc (reduced instruction set computing) chips from Cambridge-based Advanced Research Machines, Mips, the Silicon Graphics subsidiary, or Japanese chipmakers, such as Hitachi and NEC.

At the same time, manufacturers have begun to segment the market and to build machines that answer specific user requirements. This has resulted in the rapid fragmentation of the

3Com's PalmPilot does not pretend to have the same computing abilities as the Psion or CE machines. Instead, its emphasis is on its light weight, ease of use and close integration with desktop data. For example, contact lists and diary appointments can be synchronised with a desktop by simply dropping the Pilot in a docking 'cradle'.

The Palm III [the latest version of the PalmPilot] is positioned as an extension of your PC, not as a replacement," says Marc Bercom, vice-president of 3Com's Palm Computing unit. 3Com has responded to the threat posed by Microsoft's Palm PC with developments of its own. It is working with some 3,500 software developers writing new programmes using Palm OS, the PalmPilot's own operating system, and it has announced partnerships with other manufacturers.

Two of these partners, IBM and Symbol Technologies, were displaying new products at CeBIT. IBM's WorkPad is a PalmPilot look-alike aimed at the corporate market while Symbol Technologies was showing a ruggedised version of the Palm III equipped with barcode scanning and wireless networking capabilities.

Delivering wireless connectivity to handheld devices is still an area of division within the nascent handheld market. While companies such as Psion and 3Com have chosen to address this by providing either add-on devices, or software and cables to link to separate mobile telephones, other companies have sought to integrate mobile communications into their handheld devices.

Understandably, the leaders in this field have come from the telecoms sector, rather than the PC industry. Thus, Nokia's Communicator was two years ahead of most of its rivals and only now are companies such as Sharp and Philips catching up with devices that combine both mobile telephone and handheld PC technology into one unit.

Smart phones

As the worlds of computing and communications collide, more 'smart' or 'intelligent' phones capable of downloading e-mail, sending a fax or browsing the web are likely to emerge. Similarly, more sophisticated means of transferring data from standard notebook PCs are beginning to emerge. For example, Nokia, Ericsson and Motorola have all developed wireless GSM Phonecards which slot into portable PC Card slots removing the need for a separate GSM phone entirely.

The final segment of the handheld market consists of devices such as Franklin's Rex3 which was also launched in Europe at CeBIT but which has been a huge and surprising success in the US since it was introduced in November. The Rex is designed to fit into a standard PC Card slot on a portable PC or a docking station connected to a desktop and has no separate input facility - it relies entirely on its host computer to download information.

The Rex can store up to 3,000 contacts or appointments in a device no bigger than a handful of business cards. For some users, it seems this is the ideal travelling companion and no doubt there will be imitators by the time CeBIT 1999 opens in March next year.

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FT-IT 18 SYSTEM SECURITY

THE MACROVIRUS MENACE • By Christopher Price

Anti-virus industry steps up the fight

While there are 18,000 known strains of computer viruses, the number being discovered each month has doubled in the past 18 months. Now the software industry is intensifying its efforts to combat the problem

Today, like every other day, an average of 20 viruses will be unleashed on the world's computers by mischievous individuals.

While most will be quickly detected and prevented from spreading by anti-virus software, a few will prove themselves more resistant than the rest.

The CAP virus is among these. The world's most prevalent computer virus, it is widely believed to have been written by a 15-year-old Venezuelan boy.

This is hardly surprising - adolescent boys, often from second and third world countries, have always been held responsible for the production of the corrupted programmes that can wreak havoc in other people's computers. However, what has caused consternation in the computer industry has been the speed at which the CAP virus, which was written only about a year ago, has already spread around the world.

CAP was responsible for more than a fifth of all reported virus incidences in the month of January this year, according to *Virus Bulletin*, the anti-virus industry newsletter. The second most prevalent virus managed a

mere 6 per cent.

Its rapid spread is due to two significant developments in the computer industry. The first has been the emergence of the Internet. This has allowed the more speedy and widespread delivery of viruses via e-mail attachments - as well as making both viruses, and virus information, available for downloading by potential users.

The second has been the widespread adoption of software which uses 'macro' commands - in particular, Microsoft Office. Macros are sets of instructions within a program and have proved an easy target for virus writers. Microsoft software is used in around 80 per cent of the world's personal computers, and widely in business.

CAP is a 'macrovirus', as are three others in the *Virus Bulletin* top ten. In the past 18 months, the proliferation of these has led to more than double the number of new viruses being discovered each month - the figure now stands at around 500.

'Macroviruses are the big problem for the computer industry,' says Geoff Leary, chief executive of Dr Solomon's, Europe's biggest anti-virus software group. Macro was designed to be

easy to write, so virus writers have found it easy to corrupt. Virus writing was hardly rocket science before. It's certainly easier now, he says - and adds that the task has been helped immeasurably by the Internet.

Traditionally, viruses have been spread via floppy discs. This is still widespread, but has been swiftly overtaken by the emergence of macroviruses. And the Internet is not just facilitating the more rapid spread of viruses as a means of delivery. A quick browse of the World Wide Web reveals a mountain of information not only on viruses, but also of help to any potential virus writers.

The Internet has made many viruses freely available for downloading, says Sarah Gordon, an anti-virus researcher for IBM, based at the group's research centre in New York. 'It has also made the issue more acceptable for people to get involved. Virus writing is no longer an 'underground' activity.'

Ms Gordon, who has been studying viruses and writers for several years, says this, in turn, has led to a change in the profile of the perpetrators. 'It's no longer just adolescent boys - girls are

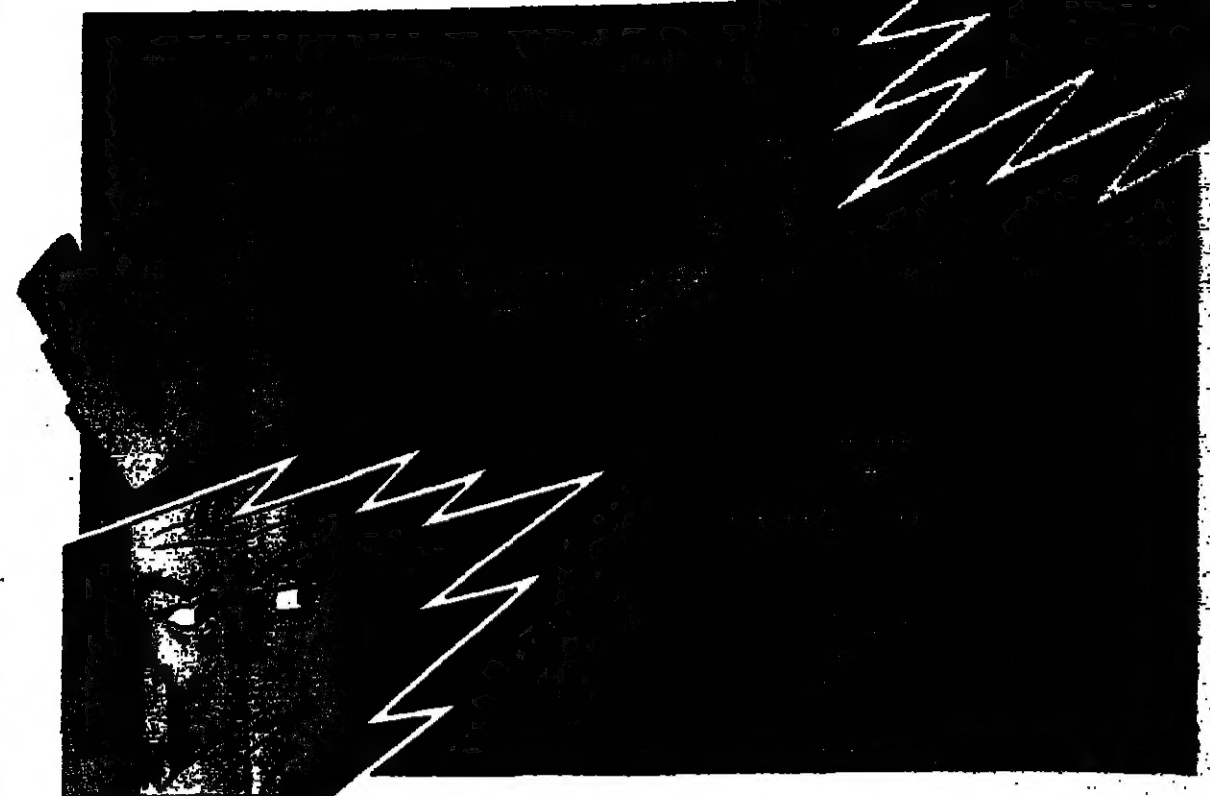
doing it, too, and the age range varies from 10 to 45.'

Neither are the writers confined to eastern Europe or other less-developed countries. 'They are just as likely to come from America or western Europe,' adds Ms Gordon. The Internet has also spawned another development: hoax viruses. Many come disguised as e-mail with welcoming titles such as 'Win A Holiday' and 'Join the Crew'.

'Hoaxes confuse people and this can lead to complacency about the real thing,' says Graham Cluley, technical director at Dr Solomon's. 'They have become a big problem for the industry.' Some industry specialists estimate that around half the software problems identified by organisations and referred to individuals and referred to anti-virus groups every month are hoaxes.

Even so, the sharp increase in real viruses is forcing the anti-virus industry - which already successfully tackles some 18,000 known strains - to develop more sophisticated techniques to deal with the escalating situation.

One method that the dozen or so anti-virus groups have always employed has been in the sharing of information. There are monthly meetings between the groups' technicians who swap information on new viruses - although stopping short of necessarily giving each other solutions. As well as sharing information,



Not so funny: hoax viruses, disguised as welcoming e-mail messages, use themes such as 'Win a Holiday' or 'Join the Crew'

the companies also keep an eye on the virus writers. 'They hold conferences, both on the Net, and on the ground,' says Mr Cluley. 'So we do occasionally have a chance to talk to them.'

Ms Gordon would like to see schools include virus prevention in their curriculums. She also believes that Internet service providers should also take a more responsible attitude in allowing virus writers to advertise their skills.

The situation is not helped by the law. In most countries, writing or sending a computer virus are not crimes. Some have laws against causing deliberate damage to someone else's computer, but this is very

difficult to prove. Indeed, in the UK only one person has ever been convicted of causing damage by a virus, and he, according to one anti-virus company executive, 'was very, very unlucky'.

However, the anti-virus industry is fighting back. Mr Cluley says the challenge for the industry is to develop more sophisticated, but unobtrusive, software which would protect against current viruses, but also automatically be updated against new strains.

This is one route being pursued by IBM, which has developed an Internet-based

software product which Steve White, senior research manager, says 'will take us further down the road to virus elimination.'

The software will contain a search engine which will be alerted to not only all known viruses, but any computer code it believes to contain irregularities and which could be a yet unknown virus. This information would then be automatically relayed via the Internet to IBM's anti-viral research centre where an identification of the suspect programme would be carried out.

IBM intends to launch its 'immune system for cyberspace' later this year.

Nick Fitzgerald, editor of *Virus Bulletin*, says that IBM is probably 12 to 18 months ahead of the competition, with its latest developments. But he believes that the industry will never achieve the total elimination of computer viruses. 'IBM's solution is feasible for between 80 and 90 per cent of suspicious viruses, but there will always be some that go undetected.'

'Two and a half years' ago, for example, no-one knew about macroviruses.'

April 1 - a trigger date for virus writers

As the first day of April is renowned for practical jokes, it will come as little surprise to find virus writers using today's date as a trigger for their disruptive payloads.

Take the 'Confour.A' virus, for example. A macrovirus, it will delete all a computer's sub-directories on the C-drive, when attempting to save a file on April 1. It will also delete the Command.com file.

A hint as to who is responsible appears if the user has named a file and then views the C:\Partion file, which will probably read 'C4 by Karl'.

Another macrovirus is the MDMAA.F or G. It attacks when a document is closed on April 1 by deleting the files 'HELP' in the Command directory, among other damaging manoeuvres.

German readers should beware the 'Cock' viruses, which come in several strains and are particularly virulent. They are often triggered on specific dates, with April 1 not surprisingly a favourite among its perpetrators. During the initial episode of starting up a computer and opening a Word document, the virus attacks the 'file' or 'save' functions.

Cock, Confour.A and the MDMAA viruses have been identified and can be combined with the appropriate anti-virus software. But what of 'Pascal Greetings' and 'Join the Crew', electronic mail which have a habit of appearing at this time of year? Again, they are not viruses at all, but hoaxes. Most computer users will get them, but few are likely to see the joke.

NEW FT-IT RESEARCH

The changing role of the IT director

The important changes that have taken place in the 1990s in the role of the chief information officer (CIO) and IT director within companies, are being examined in a special research project being jointly undertaken by the Financial Times and Korn/Ferry International Executive Search and Selection Consultants.

The results of the independent research, which is being carried out among CIOs and IT directors from the among the world's top 500 companies in the US, the UK, Germany and France, will be reported in the June edition of the FT-IT Review.

The findings will throw new light on the accountability and responsibilities of IT directors, including their spending powers, their skills and professional backgrounds.

The research will also try to find out how much influence IT directors feel they exert across the business, and with their fellow board members, and whether they are acquiring a more strategic, company-wide role, which will lead to chief information officers soon beginning to move routinely into chief executive officers' jobs.

Other questions will focus on the technological directions they believe are likely to prevail, or will be most

important, to their companies in the next century, and on the Year 2000 problem and how it is affecting other IT initiatives, and in particular spending.

Topics in forthcoming issues of the FT-IT Review

□ The next issue of the monthly review will be on Wednesday, May 6. The main theme will be digital broadcasting. The issue will also feature developments in transport telematics, plus a focus on IT in training.

Net gain magazine

□ On May 27, Net gain magazine, a new FT guide to online business and electronic commerce, will be published with the FT. Net gain will also feature winning websites from the FT-Business Web Site of the Year competition, plus details of the next competition, sponsored by UNINET.

June review

□ The June 3 FT-IT review will include a main focus on new IT develop-

ment to the retail sector.

Since June is the month of football's World Cup, there will also be a special focus on IT in sport - looking not only at football, but a wide range of other sporting events that involve an increasing use of IT.

July review

□ The issue on Wednesday, July 1 will have a main theme of IT in finance, with special sections of accounting software and developments in smartcard technologies. (There is no FT-IT Review in August).

September review

□ The issue of Wednesday, September 3, will have a main focus of logistics and the supply chain. Other sections will examine the latest sales and marketing software systems, plus developments in Internet Protocol (IP) telephony, including voice and video on corporate networks.

□ For an editorial synopsis (published two months in advance of each issue) and other details about the FT-IT Review, plus Net gain magazine, please see the main information panel on page three of this current issue, plus details of the fax-back information service in the panel, below.

FT Review of Information Technology Fax-U-Back service

For details of forthcoming issues of the FT Review of Information Technology, UK callers may use the FT-IT Fax-U-Back Service. Details include editorial synopsis of future issues and reviews for various themes.

The fax number to call is 0800 208 803. For callers outside the UK, the fax number is +44 171 673 3324.

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